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A review of the afrotropical genus *Gonioscelis* Schiner, 1866 (Diptera: Asilidae), with descriptions of new species

by

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ABSTRACT

The exclusively afrotropical genus *Gonioscelis* Schiner, 1866, now containing thirty-eight species, is revised.

Twenty-one previously described species are retained as valid and in most instances redescribed and illustrated: *ceresae* Oldroyd, 1974; *congoensis* Oldroyd, 1970; *francoisi* Oldroyd, 1970; *genitalis* Ricardo, 1925; *haemorhous* Schiner, 1867; *hispidus* (Wiedemann, 1819); *lacertosus* Engel, 1925; *longulus* Ricardo, 1925; *macquartii* (Jaennicke, 1867); *maculiventris* Bigot, 1879; *mantis* (Loew, 1852); *nigripennis* Ricardo, 1925; *occipitalis* Oldroyd, 1970; *phacopterus* Schiner, 1867; *pruinosus* Ricardo, 1925; *punctipennis* Engel, 1925; *scapularis* (Macquart, 1838); *submaculatus* Speiser, 1910; *tomentosus* Oldroyd, 1970; *truncatus* Oldroyd, 1974; *ventralis* Schiner, 1867.

Names accepted or newly established as synonyms are: *calopus* Bigot, 1879 = *mantis*; *denticulatus* Hull, 1967 = *longulus*; *femoralis* Ricardo, 1925 = *ventralis*; *maculipennis* Engel, 1925 = *ventralis*; *melanocephalus* Schiner, 1867 = *hispidus*; *oculatus* Engel, 1925 = *lacertosus*; *rufescens* Ricardo, 1925 = *ventralis*; *setosus* (Wiedemann, 1824) = *hispidus*; *xanthopogon* Speiser, 1910 = *macquartii*.

Seventeen new species from the countries listed are described and illustrated: *amnoni* (Kenya, Tanzania); *batyleon* (Kenya); *bykanistes* (Namibia, South Africa); *chloris* (South Africa); *cuthbertsoni* (Zimbabwe); *engeli* (South Africa); *exouros* (South Africa); *feijeni* (Mozambique); *hadrocantha* (Angola); *iota* (South Africa); *kedros* (South Africa); *melas* (South Africa); *pickeri* (South Africa); *ramphis* (Botswana, South Africa); *whittingtoni* (Eritrea, Ghana, Kenya, Malawi, Zambia, Zimbabwe); *xanthochaites* (Namibia); *zulu* (South Africa).

Tables of information relating to the distribution and phenology of all species are provided, together with an illustrated key to assist in their identification.

A discussion of the taxonomy and biology of the genus is provided, along with a bibliography.

INTRODUCTION

With twenty-eight catalogued species, *Gonioscelis* Schiner, 1866 which is restricted to the afrotropics, is the eighth most speciose asilid genus in the region (Oldroyd 1980). Its abundance and diversity in southern Africa has resulted in a large collection being accumulated at the Natal Museum (Pietermaritzburg, South Africa) where an active collecting programme has been pursued over the last three decades. The genus, although similar to four other stenopogonine genera with laterally compressed heads (*Stenopogon* Loew, 1847, *Rhacholaemus* Hermann, 1907, *Haroldia* Londt, 1999, *Afroscleropogon* Londt, 1999), is distinctive in that all species possess a highly diagnostic femoral spur posteroventrally on the prothoracic legs (Fig. 1), making it difficult to confuse the genus with any other and therefore a seemingly attractive taxonomic research subject. Revisionary work commenced in the early 1980s when a number of type specimens were examined during the course of an overseas research tour. The study was subsequently sidelined for a few years before being developed once more during the late 1990s. This

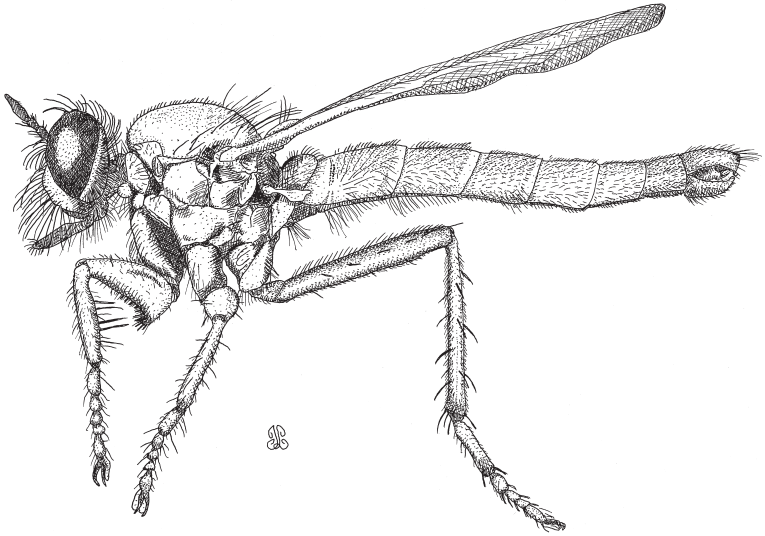


Fig. 1. *Gonioscelis ventralis* Schiner, 1867. General habitus.

protracted programme, coupled with the fact that the genus proved to be much larger than anticipated and the species often difficult to define, has prolonged the study.

The taxonomic history of *Gonioscelis* can be briefly summarised as follows:

Wiedemann (1819) – Described *Dasypogon hispidus* from 'Prom. bon. sp.' (South Africa, Cape Peninsula).

Wiedemann (1824) – Described *Dasypogon setosus* from 'Prom. bon. sp.' (South Africa, Cape Peninsula).

Macquart (1838) – Described *Dasypogon scapularis* from 'Du Cap.'.

Loew (1852) – Writing ahead of his 1862 publication, provided a list of species collected in Mozambique which included a brief first description of *Stenopogon mantis*.

Loew (1862) – Published another description of *Stenopogon mantis*.

Schiner (1866) – Described *Gonioscelis* with *Dasypogon hispidus* as type-species.

Jaennicke (1867) – Described *Stenopogon macquartii* from 'Abyssinia'.

Schiner (1867) – Redescribed *Dasypogon setosus* (from the Cape of Good Hope), placing it in *Gonioscelis*, and added four new species (*G. haemorhous*, *G. melanocephalus*, *G. phacopterus*, *G. ventralis*) from 'Afrika'.

Bigot (1879) – Described two new species (*G. calopus* and *G. maculiventris*) from KwaZulu-Natal (South Africa).

Speiser (1910) – Recorded *G. phacopterus* and described *G. submaculatus* and *G. xanthopogon* from material collected during Sjöstedt's expedition to Mount Meru in present-day Tanzania.

Engel (1925) – Listed 17 species known to him, keyed 11 (*G. macquartii* being treated as a variety of *G. ventralis,* and *G. calopus* as a synonym of *G. mantis*) and described four new species (*G. lacertosus*, *G. maculipennis*, *G. oculatus*, *G. punctipennis*).

Ricardo (1925) – Described the male of *G. calopus* (from Estcourt, KwaZulu-Natal) and six new species (*G. femoralis*, *G. pruinosus*, *G. rufescens*, *G. nigripennis*, *G. longulus*, *G. genitalis*) from South Africa, Namibia, Zimbabwe and Kenya.

Hull (1962) – Provided a redescription of the genus together with good illustrations of some species. He listed 21 species, all from the Ethiopian (= Afrotropical) Region.

Hull (1967) – Described *G. denticulatus* from Lesotho.

Oldroyd (1970) – Provisionally recorded *G. maculipennis* from Tanzania and described four new species (*G. congoensis*, *G. francoisi*, *G. occipitalis*, *G. tomentosus*) from the Democratic Republic of Congo and Burundi. For comparison with *congoensis*, an illustration of the male genitalia of *G. genitalis* was also provided.

Oldroyd (1974) – Provided a key to some South African species (*G. genitalis, G. haemorhous, G. hispidus, G. lacertosus, G. longulus, G. mantis, G. nigripennis, G. rufescens, G. ventralis*), including brief descriptions of two new ones (*G. ceresae*, *G. truncatus*).

Oldroyd (1980) – Catalogued 28 Afrotropical species, inadvertently excluding *G. francoisi*. *D. scapularis* was catalogued as an 'unplaced species of Dasypogoninae'.

Londt (1985) – Transferred *D. scapularis* to *Gonioscelis* after studying the holotype.

Londt (1994) – Published a key to the afrotropical genera of Stenopogoninae that included *Gonioscelis*.

Londt (1999) – Updated his 1994 key to include new genera.

MATERIALS AND METHODS

Material

Material studied is housed in the Natal Museum (NMSA) unless otherwise indicated. Other institutions providing or housing specimens are listed below, together with the abbreviations used in the text when citing these repositories and the names of people who assisted with information or loans.

AMGS	Albany Museum, Grahamstown, South Africa (F. Gess).
BMNH	The Natural History Museum, London, U.K. (J. Chainey & D. Notton).
CASC	California Academy of Sciences, San Francisco, U.S.A. (N. Penny).
INHS	Illinois Natural History Survey, Champaign, Illinois, U.S.A. (D. Webb).
ISNB	Institut Royal des Sciences Naturelles de Belgique, Bruxelles, Belgium (P. Limbourg).
MNHN	Museum National d'Histoire Naturelle, Paris, France (J. Charbonnel).
MRAC	Musee Royal de l'Afrique Centrale, Tervuren, Belgium (E. de Connink).
NHMW	Naturhistorisches Museum Wien, Wien, Austria (R. Contreras-Lichtenberg).
NHRS	Naturhistoriska Riksmuseet, Stockholm, Sweden (T. Pape).
NMNH	National Museum of Natural History, Smithsonian Institution, Washington, U.S.A. (F. Christian Thompson)
NMNW	National Museum of Namibia, Windhoek, Namibia (A. Kirk-Spriggs).
OXUM	Hope Entomological Collections, University Museum, Oxford, U.K. (J. McGavin)
SAMC	South African Museum, Cape Town, South Africa (M. Cochrane).

SMFD – Forschungsinstitut und Naturmuseum Senckenberg, Frankfurt, Germany (F. Geller-Grimm).
SMNS – Staatliches Museum für Naturkunde Stuttgart, Stuttgart, Germany (H.-P.Tschorsnig).
UZMD – Zoologisk Museum, Copenhagen, Denmark (L. Vilhelmsen).
ZMHB – Zoologisches Museum, Berlin, Germany (W. Mey).
ZSMC – Zoologische Staatssammlung, Munich, Germany (W. Schacht).

In all instances, specimens were dry-mounted on pins. Drawings were executed with the aid of a drawing-tube attached to a Wild stereo-microscope, male terminalia being first removed and macerated in warm potassium hydroxide. Genitalia were stored temporarily in glass vials containing 70% ethanol until the completion of the study, when they were sealed in polyethylene genitalia vials containing a mixture of ethanol and glycerine; the vials were then attached to the specimen pins.

Label data

In recording label data for all specimens, a standard format is usually employed where information contained on each label is demarcated by the use of single inverted commas, each line of data being separated by a spaced slash (/) (note that when a slash appears on labels no spaces are provided on either side of it). The symbol ~ indicates that the following data are on the reverse of the label just documented, while square brackets are used to denote useful additional information or comment not found on labels. In this regard, co-ordinates are usually provided in square brackets when these, or a quarter-degree grid reference, do not appear on a label. These co-ordinates appear immediately following the gazetteered name, no adjustment being made when specimens were collected some distance from the place named. In some instances names or their spelling have changed and so additional information may be provided where necessary. When two or more similar entries were encountered in gazetteers the co-ordinates of the 'populated place' are usually given. When more than one populated place has the same name the co-ordinates of what appears to be the largest centre are provided. The institution housing the specimen(s) is provided (in parentheses) when *not* the Natal Museum. Specimens are also arranged roughly in geographical order within a country (i.e. according to latitude and longitude) to assist in mapping, but the countries are given in alphabetical order.

Descriptive passages

Descriptions and redescriptions are provided in a more or less standard format using the following headings:

Etymology: Used only to indicate the origins of names provided for newly described species.

Description / Redescription: A general heading for the description of the species, usually based on the primary type but supplemented by information relating to other material. The section is divided into subsections dealing with the *head*, *thorax* and *abdomen*.

Terminalia: A description of the male genitalia, when available, is included in a separate section because of its importance.

Variation: Some indication of the degree of variation seen in the species is provided.

Type material: All known type-specimens are listed. In each case it is recorded if the specimen was seen by me.

Type locality: Type localities are provided; in some instances these are designated for the first time.

Other material: This section lists material, other than types, studied. Specimens are arranged in the standard format described above.

Recorded material not studied: Where relevant, a comment is provided regarding published records of specimens not studied by me.

Notes: A section used to provide comments relating to identifications or material not covered elsewhere.

Distribution, phenology and biology: A section dealing briefly with these subjects is provided. Reference to tabulated information and distribution maps is made. When biological information is not supplied this is because there is none.

Similar species: A section used for brief comments on similarities with other species. No attempt at establishing phylogenetic relationships is made.

Morphology

Terminology used generally follow McAlpine (1981). As far as descriptions are concerned the following characters were given attention.

Head

Antenna: Colour and setation of scape and pedicel (postpedicel and style lack setae).

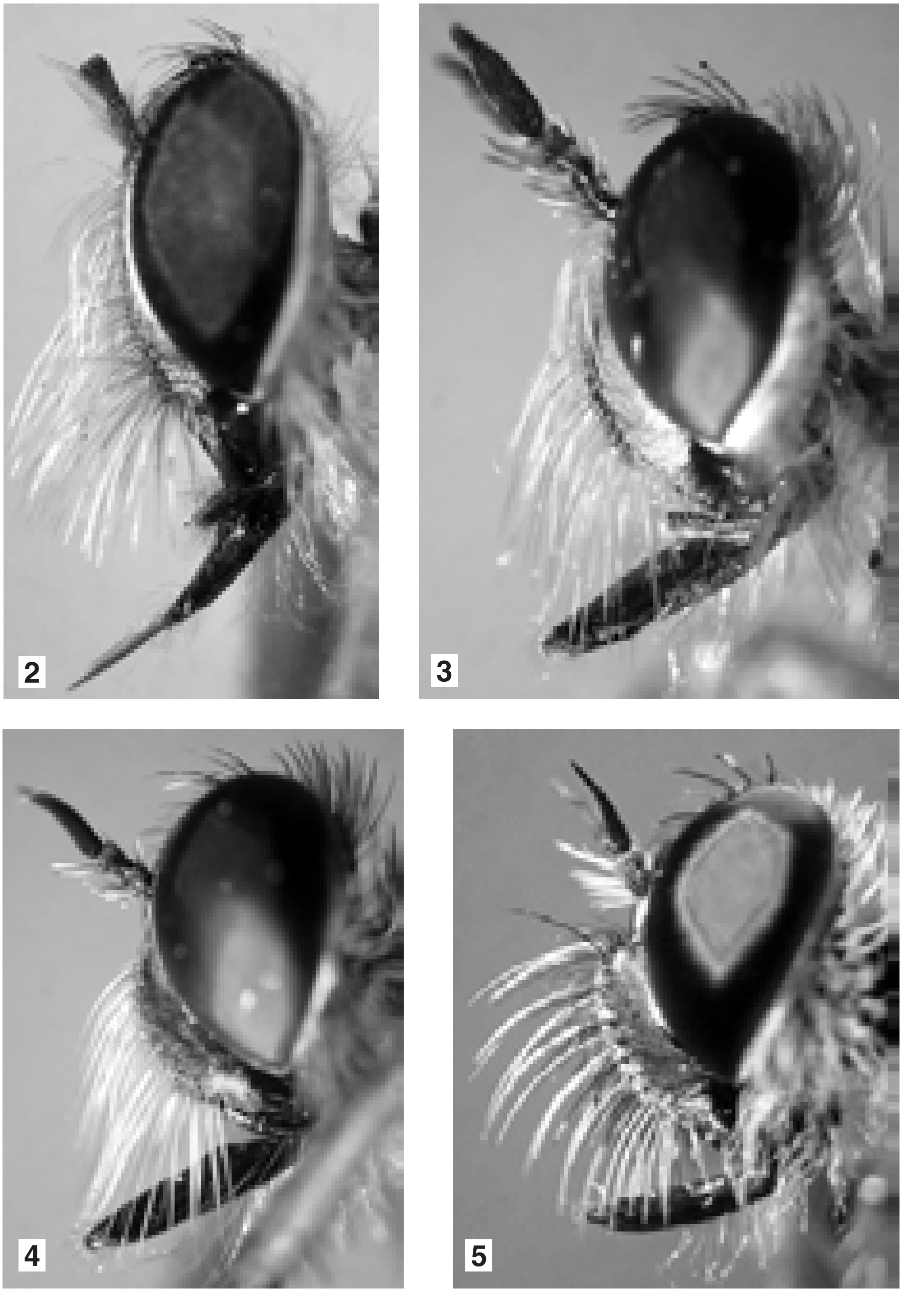
Face: The degree of facial swelling (extent of gibbosity) is recorded. There are two basic conditions – (1) a poorly developed gibbosity with dorsal region not terminating abruptly, but gradually diminishing until the swelling blends with the plane area below antennal sockets (e.g. Fig. 2); and (2) a very pronounced (and probably more apomorphic) gibbosity with dorsal region well-developed and terminating abruptly a short distance from antennal sockets (e.g. Fig. 5). The terms ‘poorly developed’ and ‘pronounced’ summarise these conditions in formal descriptions. In a few instances an intermediate condition is encountered, examples are illustrated (e.g. Figs 3–4).

Mystax: The colour and development of the mystax (facial setae) are described. The mystax may be fairly well developed from epistomal margin to antennal sockets (e.g. Fig. 2), or confined to the facial gibbosity (e.g. Fig. 5), but intermediate states are found (e.g. Figs 3–4).

Frons and vertex: Colour and pruinescence is described. In many instances pruinescence is weak and difficult to describe. Included here is some detail relating to the ocellar tubercle, with emphasis on the colour of ocellar setae (*oc*).

Occiput: The basic colour is given along with the colour of pruinescence and setae. In some instances apruinose areas immediately behind the vertex are mentioned when relevant. Occipital setae are sometimes divided into dorsal, central and ventral groups (head being viewed laterally) as the development of setae in these regions may be different.

Proboscis and palpus: Integumental and setal colour is provided. The palpus is always two-segmented, both segments normally bearing long, thin setae.



Figs 2–5. *Gonioscelis* species, head, showing development of facial gibbosity and mystax. 2. *G. submaculatus* Speiser, 1910 (Valley of Lower Shire), poorly defined gibbosity, and mystax extending fairly strongly to antennal sockets. 3. *G. longulus* Ricardo, 1925 (Paul Roux), moderate gibbosity, and mystax extending moderately to antennal sockets. 4. *G. lacertosus* Engel, 1925 (Hantamsberg Summit), moderate gibbosity, and small weak setae between gibbosity and antennal sockets. 5. *G. punctipennis* Engel, 1925 (Garies), well-developed gibbosity, and complete lack of setae between gibbosity and antennal sockets.

Thorax

General: Colour is described in general terms along with pruinescence colour. This usually refers to the mesonotum, but may also relate to the pleura.

Postpronotal lobes: The colour of these lobes is given along with a statement on whether the condition contrasts with that of the mesonotum as this can be an important distinguishing character. Postpronotal lobe setation is also described.

Mesonotal setae colour: This is usually stated when all the major macrosetae are uniformly coloured thus saving the need to repeat colours when listing number and colour of each group of setae.

Acrostichal setae (*ac*): When present (not commonly), colour and distribution are discussed. When present these setae are arranged in what appears to be a single row anteriorly.

Dorsocentral setae (*dc*): The number of pairs is given along with their colour when not already stated, as well as their distribution in relation to the transverse suture. Three states of development are recognised – (1) setae occur only posterior to the suture; (2) setae extend a little anterior to the suture (when they are smaller than those posterior of the suture); and (3) setae clearly extend anterior to the transverse suture, and are quite well-developed anteriorly.

Notopleural setae (*npl*): The average number and colour are stated. It is important to note that the number given does not include the post humeral setae when present.

Supra-alar setae (*sa*): Number and colour recorded.

Postalar setae (*pa*): Number and colour recorded.

Scutellum: Colour and number of marginal scutellar macrosetae (*mrg sct*) are given.

Wing: Length in millimeters, measured from humeral cross-vein to tip, and a description of colour are given. The general venation and some of the character states mentioned in the text are illustrated (e.g. Figs 6–9).

Legs: General ground and setal colour are described. The prothoracic femur has what is here called a 'spur' proximoventrally. This spur is always equipped with short, black, spine-like macrosetae and is frequently darkly pigmented when compared to other parts of the legs. This is not always stated as it is overall leg colour that is usually considered. As there is often much variation, little detail is provided.

Femoral spur: The degree of 'pointedness' is recorded. Using a protractor, drawings of femoral spurs were measured with respect to the angle of the apical point of the spur (Figs 16–17 show how measurements were taken). Because of difficulties experienced in measuring this angle accurately, spur angle is given to the nearest 5° and categorised as (1) sharply pointed (10–30°); (2) moderately pointed (35–55°); and (3) bluntly pointed (60–80°). The kind of variation encountered is depicted in Figs 10–15.

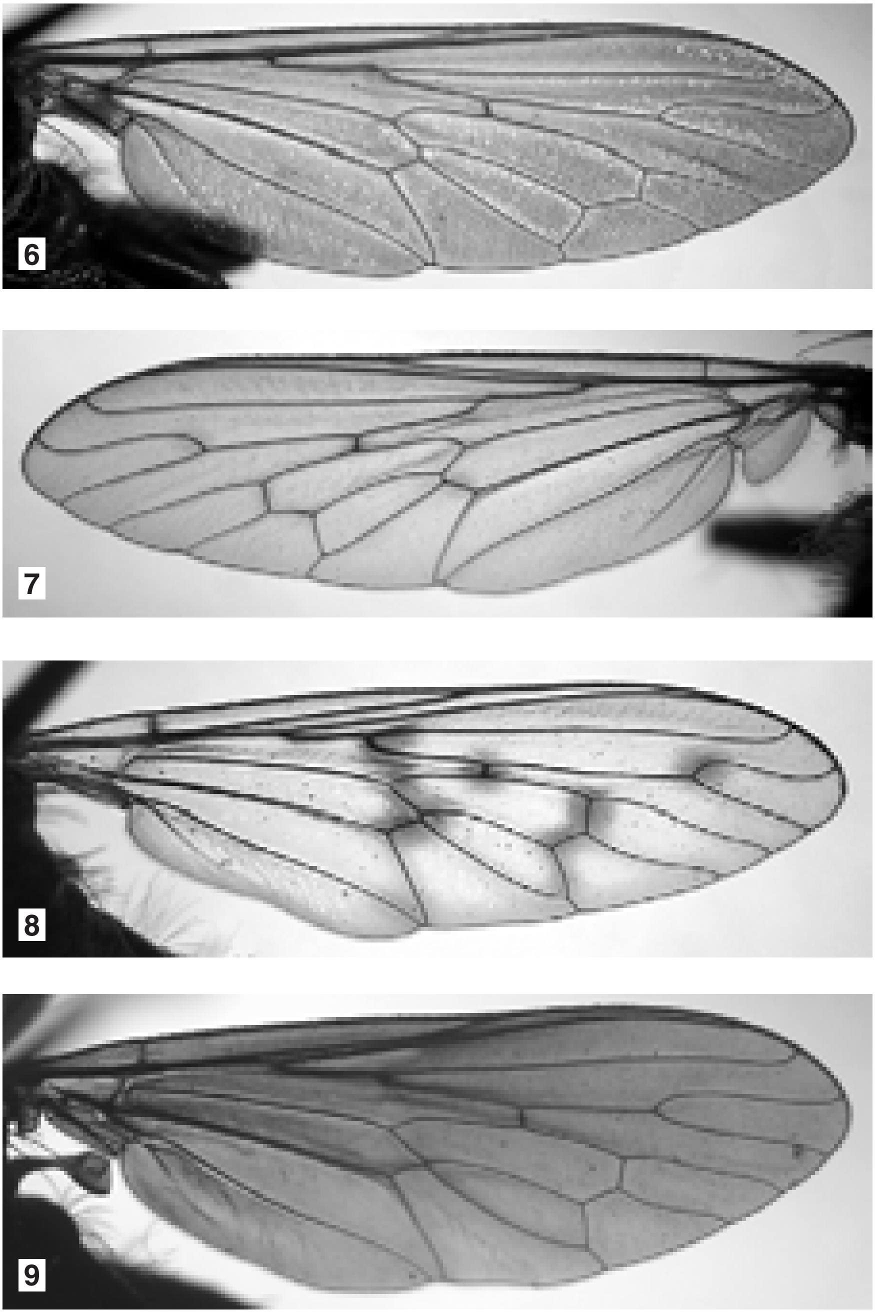
Prothoracic coxa: The ground colour, colour of pruinescence and setal colour are described.

Abdomen

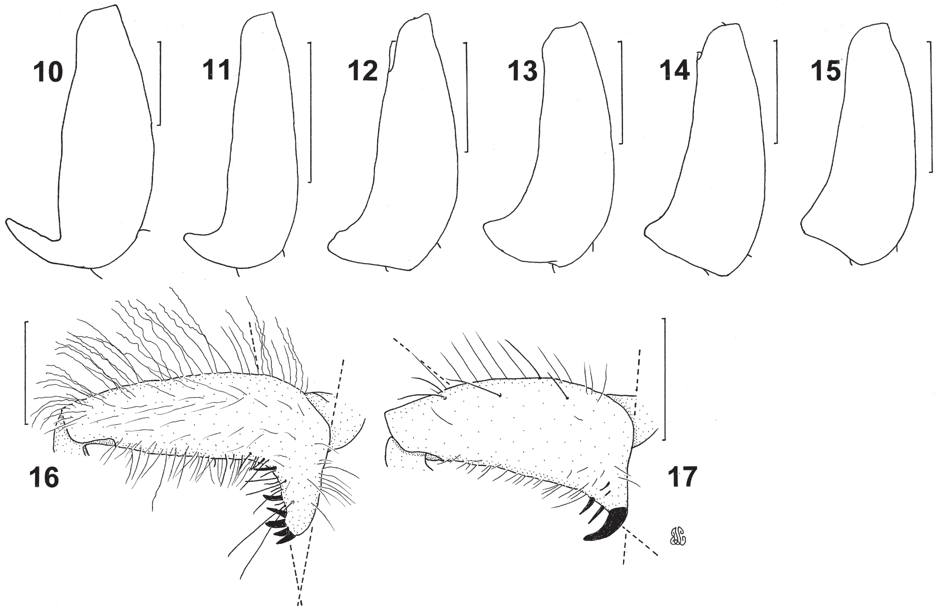
Tergites: Colour of integument, pruinescence and setae are given.

Sternites: Colour of integument, pruinescence and setae are given.

Terminalia: Where possible, illustrations of male genitalia are provided. Three views (lateral, dorsal and ventral) of macerated structures are usually supplied. The



Figs 6–9. *Gonioscelis* species, wing, showing some variation encountered. 6. *G. ventralis* Schiner, 1867 (Vaalbos National Park) microtrichial colours results in central parts of cells appearing darker than areas adjacent to veins. 7. *G. cuthbertsoni* sp. n. (Angwa Bridge) showing very weak spotting at forks and crossveins. 8. *G. punctipennis* Engel, 1925 (10 km W Garies) showing strong spotting at forks and crossveins. 9. *G. melas* sp. n. (31 km N Sutherland) showing generally dark wings caused mainly by black microtrichia.



Figs 10–17. *Gonioscelis* species, left prothoracic femur, showing variation in spur development and method of measuring spur angle (16–17). 10. *G. melas* sp. n. (25 km N Kamieskroon). 11. *G. chloris* sp.n. (4 km SW Clanwilliam). 12. *G. longulus* Ricardo, 1925 (Paul Roux). 13. *G. cuthbertsoni* sp. n 7 km SE Angwa Bridge). 14. *G. macquartii* Jaennicke, 1867 (Nguruma). 15. *G. nigripennis* Ricardo, 1925 (Erikson's Drift). 16. *G. xanthochaites* sp. n. (Aus). 17. *G. hadrocantha* sp. n. (Roçadas). Scale lines = 1 mm.

specimen illustrated is indicated in the caption to the illustration. Brief comments on the following structures are then provided to guide the reader when viewing the drawings. Epandrium (*ep*): A statement regarding length, as compared with the proctiger, is given along with details relating to shape and setation, particularly of the tips of the epandrial lobes. Drawings often show only the bases of major macrosetae in order to save space (at least one view usually shows these setae completely). Gonocoxite (*gcx*): A brief description is given, usually based on the lateral view illustrated. Attention is given to the number (usually two or three) and form of distal projections and setae. Hypandrium (*hyp*): The shape is briefly described, mentioning proportions (length versus breadth in ventral view) and form of distal end.

Illustrations

Final illustrations were prepared from pencil drawings. They do not in all instances show setae, as the shape of structures is considered more important than setal number or distribution. Illustrations of male genitalia may not show structures that are obscured by others—for example, when illustrating the ventral view, details of the proctiger may be omitted as this organ is shown in dorsal view. Heads and wings were not removed from specimens for illustration.

TAXONOMY

Gonioscelis Schiner, 1866

Gonioscelis Schiner, 1866: 670. Type-species: *Dasypogon hispidus* Wiedemann, 1819, by original designation.

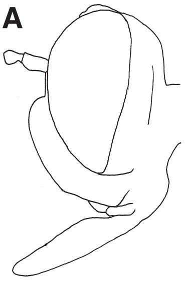
Diagnosis: Stenopogonine asilids with the following combination of characters: Anatergites asetose. Costa extending around entire wing margin and bordering anal lobe and alula. Palpus two-segmented. Face narrow, giving the head an almost circular shape when viewed anteriorly. Katatergites asetose. Prothoracic femora with prominent proximoventral spinose process (spur).

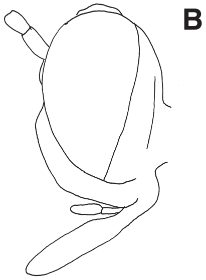
Key to species of *Gonioscelis*

Use of this key requires a male specimen, and preferably, macerated genitalia. Female specimens cannot be identified with confidence in the absence of associated males. Confirmation of identifications should be obtained by referring to the detailed descriptions or redescriptions provided.

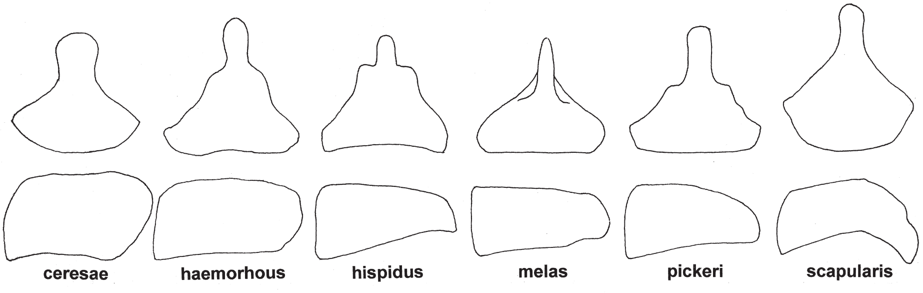
1a Face strongly gibbose (Fig. A), no or very few tiny setae between gibbosity and antennal sockets. Species entirely or very largely confined to winter rainfall areas of South Africa (west coast of Western Cape and Northern Cape provinces) and Namibia (south-western region). 2

1b Face weakly gibbose (Fig. B), area between gibbosity and antennal sockets with moderately developed setae (never as well developed as those of gibbosity). Species not usually confined to winter rainfall areas of South Africa and Namibia. 4



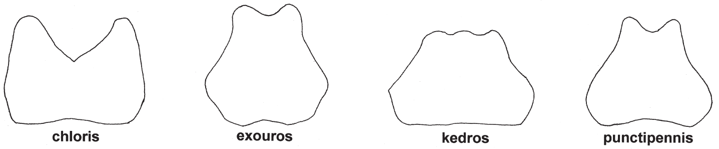


2a Hypandrium with pronounced mediodistal process. Shapes of hypandrium (viewed ventrally) and epandrium (viewed laterally – with distal end at right-hand side) separate species as follows:

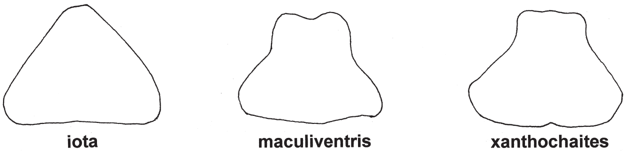


2b Hypandrium mediodistally smoothly rounded, shallowly bilobed or trilobed. ... 3

3a Wings marked with dark spots (as in Fig. 8). Shape of hypandrium (viewed ventrally) separates species as shown below. Similar species, *exouros* and *punctipennis*, are easily separated on development of proctiger which is greatly enlarged and projecting well beyond tips of epandrial lobes in *exouros*.

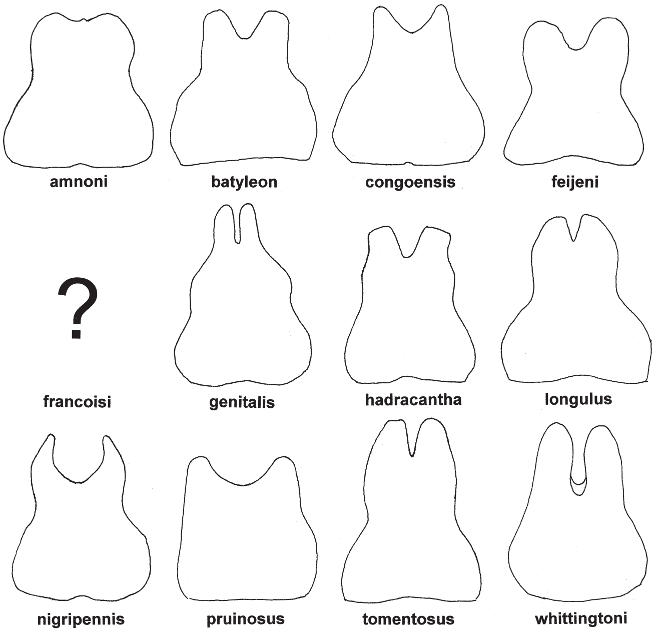

chloris
exouros
kedros
punctipennis

3b Wings not spotted (i.e. they may be completely unmarked (*iota*) or otherwise shaded). Shape of hypandrium (ventrally) separates species as shown below.

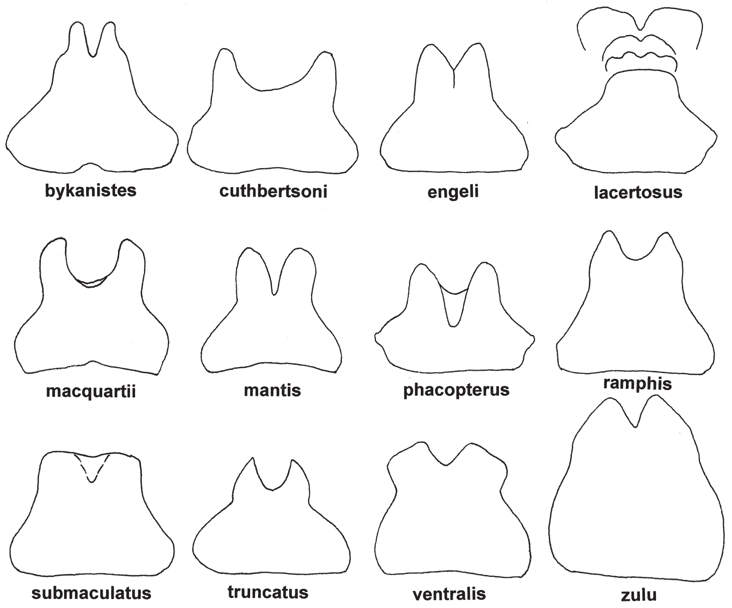

iota
maculiventris
xanthochaites

4a Hypandrium with maximum length greater than maximum width in ventral view (if only slightly longer, check other branch of key). Species can be separated on the shape of the hypandrium, as shown below. These species, with exception of *genitalis*, *longulus*, *nigripennis* and *tomentosus*, are only found north of southern Africa.

Notes: A ventral view of the hypandrium of *francoisi* is not available as the only known male is now without genitalia (see Fig. 48 for lateral aspect – the ventral appearance is probably close to *nigripennis*), while *occipitalis*, which is probably a member of this group, cannot be identified using this key, as males are unknown.


amnoni
batyleon
congoensis
feijeni
?
francoisi
genitalis
hadracantha
longulus
nigripennis
pruinosus
tomentosus
whittingtoni

4b Hypandrium with maximum width greater than maximum length in ventral view (if only slightly wider, check other branch of key). Species may be separated on the shape of the hypandrium as shown below. These species, with exception of *macquartii* and *submaculatus*, are found only in southern Africa.



Species descriptions (alphabetically arranged)

Gonioscelis amnoni sp. n.

Figs 18–20, 144

Etymology: Named for Dr Amnon Freidberg who collected the type specimens and graciously donated a significant number of East African Diptera to the Natal Museum.

Description: Based primarily on holotype ♂ (NMSA). The specimen is slightly greasy.

Head: Antenna dark red-brown to black, gold pruinose, dark red-brown to black setose. Facial swelling poorly developed, mystax uniformly pale yellow, those between gibbosity and antennal bases not as well developed as those on gibbosity. Frons and vertex gold pruinose. Ocellar tubercle apruinose with black *oc*. Occiput gold-silver pruinose except for two small apruinose areas behind vertex, pale yellow setose. Proboscis and palpus dark red-brown to black, pale yellow setose.

Thorax: Dark red-brown to black, gold pruinose. Postpronotal lobes orange, contrasting with adjacent mesonotum, pale yellow setose. Mesonotal setae pale yellow: *ac* not evident; approx. 5 pairs *dc* not extending anterior of transverse suture; 4 *npl*; 2 *sa*; 3–4 *pa*. Scutellum blackish, gold pruinose, with 4 pale yellow *mrg sct*. Wing length 10 mm, membrane mostly pale yellow, central parts of cells light gray. Legs: Brown-orange with dark red-brown parts as follows – prothoracic femur posterodorsally and almost entire anterior face, mesothoracic femur with patches anteroproximally and distoventrally, metathoracic femur ventrally, setae mostly yellow. Prothoracic coxa black, gold pruinose, white setose; femoral spur moderately pointed (angle approx. 35°).

Abdomen: Tergites dark red-brown, gold-silver pruinose, yellow setose. Sternites similar to tergites.

Terminalia (Figs 18–20): Moderately long *ep* (i.e. lobes project only slightly beyond tip of proctiger), tapering gradually distally, with a few strong terminal macrosetae; *gcx* with two distal projections, ventral one having a basal, distally projecting flange with a few small setae; *hyp* in ventral view with maximum length only slightly greater than maximum breadth, distally shallowly bilobed with median upwardly-directed flange-like process (evident both ventrally and laterally).

Variation: The topotypic paratype ♀ agrees well with the holotype. There is no significant sexual dimorphism.

Type material: CAMEROON: 1♂ **paratype**, 'Guétalé [10°04'N 14°30'E] / xi 67 [1967]', 'Muséum Paris / Cameroun / Nonveiller leg.' (MNHN). KENYA: 1♂ **holotype** 1♀ **paratype**, 'Kenya (West) / Chepareria [01°19'N 35°12'E] / 24.xi.1989 / A. Freidberg / & Fini Kaplan'. TANZANIA: 1♂ **paratype**, 'Tanganyika: / Old Shinyanga. [03°34'S 33°23'E] / 28.v.53 / E. Burtt / Block 11', 'Com. Inst. Ent. / Coll. No. 13444' (BMNH); 1♂ **paratype**, 'Tanganyika: / Rukwa Valley. [08°00'S 32°00'E] / 28.v.1948 / Z. Waloff', 'Pres. by / Anti-Locust / Res. Centre. / B.M. 1948-457.' (BMNH).

Other material: CAMEROON: 1♀, 'Koza / Guétalé [10°04'N 14°30'E] / Oct. 66', 'Muséum Paris / Cameroun / B. de Miré' (MNHN). TCHAD: 1♀, 'Museum Paris / Bas Chari / Fort Lamy [12°07'N 15°03'E] / Mission Chari-Tchad / Dr J. Decorse 1904', 'Octobre' (MNHN).

Type locality: Kenya: Chepareria.

Notes: The Cameroon female is in bad condition and may not be conspecific. The Tchad female is very similar to the holotype and is probably correctly identified.

Distribution, phenology and biology (Tables 1–2, Fig. 144): Known from a few localities, in Cameroon, Kenya, Tanzania, and possibly Tchad, the species straddles the equator and has been collected in November, May and possibly October.

Similar species: A member of the large and widely distributed group of species possessing a poorly defined facial gibbosity. The species has distinctive male genitalia not easily confused with any other species except possibly *submaculatus* which also has a somewhat distally truncated hypandrium.

Gonioscelis batyleon sp. n.

Figs 21–23, 144

Etymology: Gr. *batyle* – dwarf (female) + *leon* – lion. Refers to the small size of this tawny predator.

Description: Based primarily on holotype ♂ (BMNH).

Head: Antennal scape brown-orange, pedicel orange-brown, postpedicel dark red-brown, setae mostly yellow except for some dark red-brown ones ventrally. Facial swelling poorly developed, mystax uniform pale yellow-white, weaker between gibbosity and antennal sockets. Frons and vertex thinly silver pruinose. Ocellar tubercle apruinose with dark red-brown *oc*. Occiput dark red-brown, gold-silver pruinose except for two apruinose areas behind vertex, setae pale yellow-white. Proboscis and palpus orange-brown, pale yellow-white setose.

Thorax: Brown-orange with dark red-brown markings, thinly silver-gold pruinose. Mesonotum with three longitudinal thinly pruinose stripes, central one being longest. Postpronotal lobes brown-orange, not contrasting with adjacent mesonotum, with few pale yellow-white setae. Mesonotal setae mostly pale yellow-white: *ac* not evident; approx. 6 pairs *dc* dark red-brown anteriorly, just extending anterior of transverse suture; 3 *npl* (most anterior brown); 2 *sa*; 2–3 *pa*. Scutellum brown-orange, with 2 pale yellow-white *mrg sct*. Wing length 6.1 mm (paratype 5.4 mm), membrane mostly yellow-brown. Legs: Mostly brown-orange except for much of anterior surface of prothoracic femur and anteroventral aspects of mesothoracic femur which are dark red-brown, macro setae dark red-brown, minor setae pale yellow-white. Prothoracic coxa brown-orange, silver-gold pruinose, white setose; femoral spur bluntly pointed (angle approx. 60°).

Abdomen: Tergites orange-brown to brown-orange (anterior tergites darker than posterior ones), gold-silver pruinose, fine yellow-white setose. Sternites brown-orange, thinly gold-silver pruinose, fine yellow-white setose.

Terminalia (Figs 21–23): Long *ep* (i.e. lobes project beyond tip of proctiger), tapering gradually distally, with a few strong terminal macrosetae; *gcx* with two inwardly directed distal projections and fine setae; *hyp* in ventral view slightly longer than broad, tapering rapidly to mid-length before broadening slightly and terminating in a pair of macrosetose lobes separated by a space approximately equal to width of each lobe.

Variation: Little evident. Female unknown.

Type material: KENYA: 2 ♂ (**holotype** and **paratype**), 'Meneghetti / 2-1943 / Nairobi [01°17'S 36°49'E]', 'Pres. by / Coryndon Mus. / B.M. 1961-696' (BMNH).

Type locality: Kenya: Nairobi.

Distribution, phenology and biology (Tables 1–2, Fig. 144): Known only from the type locality, both specimens being collected in February.

Similar species: A member of the large and widely distributed group of species possessing a poorly defined facial gibbosity. Although sharing a similar hypandrial shape to species like *feijeni*, *hadrocantha* and *whittingtoni*, *batyleon* can be readily distinguished from these and other supercially similar species using other features of the male genitalia.

Gonioscelis bykanistes sp. n.

Figs 24–26, 146

Etymology: Gr. *bykanistes* – trumpeter. Refers to the trumpet-shaped aedeagal tip.

Description: Based primarily on holotype ♂ (NMSA).

Head: Antenna black, mostly dark red-brown setose. Facial swelling moderately developed, with poorly defined point at which dorsal region terminates below antennal sockets, mystax uniform orange, setae between gibbosity and antennal sockets smaller than main mystacal macrosetae. Frons and vertex weakly red-gold pruinose. Ocellar tubercle shiny black apruinose with black *oc*. Occiput silver pruinose except for largely apruinose area behind vertex, setae orange. Proboscis and palpus dark red-brown, orange setose.

Thorax: Black, thinly silver-gold pruinose (central parts of mesonotum somewhat shiny apruinose). Postpronotal lobes brown-orange, contrasting with adjacent mesonotum, with approx. 5 brown-yellow macrosetae and yellow setae. Mesonotal setae brown-yellow: *ac* not evident; approx. 5 pairs *dc* not extending anterior of transverse suture; 3 *npl*; 3–4 *sa*; 2–3 *pa*. Scutellum black, silver pruinose, with 6 brown-yellow *mrg sct*. Wing length 7.8 mm, membrane mostly pale brown, basally somewhat orange. Legs: Orange, except for dark red-brown anteroproximal parts of prothoracic femur and dark red-brown anterior stripe on metathoracic femur, setae mainly black, but dark red-brown and orange ones also present. Prothoracic coxa blackish, gold-silver pruinose, orange setose; femoral spur moderately pointed (angle approx. 40°).

Abdomen: Tergites black, thinly silver-gold pruinose (some areas shiny apruinose), orange setose. Sternites black, mostly shiny apruinose (only tiny spots of pruinescence on hind margins medially), setae orange.

Terminalia (Figs 24–26): Short *ep* (proctiger projecting slightly beyond epandrial lobes), tapering gradually distally, with minor apical setae only; *gcx* with three distal projections, the most distal one possessing a small, darkly-sclerotised process and a few small setae basally; aedeagus with trumpet shaped distal end; *hyp*, in ventral view, with maximum breadth slightly greater than maximum length, tapering distally to well-defined bilobed apex (lobes lying almost parallel with one another).

Variation: A fairly uniform species. The mystax may be pale yellow-white (cream) in colour (more commonly found in females). Legs may vary considerably in colour from entirely pale orange to quite extensively dark red-brown. Male terminalia show little variation over the species range.

Type material: NAMIBIA: 4♂ 3♀ **paratypes**, 'Namibia 22.iii.1984 / 10km SW Tsumeb. Rd 1/9 / 19 18'S 17 37'E / Stuckenberg & Londt / Mixed woodland and / roadside grass'; 2♂ 7♀ **paratypes**, 'S.W. Africa (W36) / Otjikoko Süd Fm. [farm], / 33 mls. ENE. / Omaruru [21°26'S 15°56'E] / 10-13.ii.1972', 'Southern / African Exp. / B.M. 1972-1' (BMNH); 1♂ **paratype**, 'S.W. Africa (W30) / Ameib Farm / 19 mls. NW. Karibib [21°56'S 15°50'E] / 31.i.-2.ii.1972', 'Southern / African Exp. / B.M. 1972-1' (BMNH); 1♂ **holotype**, 2♂ 2♀ **paratypes**, 'Namibia 29.iii.1984 / Gross Barmen Resort / 22 07'S 16 42'E / Londt & Stuckenberg / Roadside grass & dry / river bed at camp.'; 1♂ **paratype**, 'Otjiseva 45 / Windhoek. S.W.A. / SE 2216 Bd / 12 Mar. 1971', 'H11129' (NMNW); 9♂ 7♀ **paratypes**, 'Namibia 29.iii.1984 / 26km N Windhoek. Road / 1/6. 22 20'S 17 04'E / Londt & Stuckenberg / Dry stream bed Acacia / riparian woodland.'; 2♂ 3♀ **paratypes**, 'S.W. Africa (W34) / Regenstein, 15 mls., / SSW. Windhoek, [22°35'S 17°05'E] / 8.ii.1972', 'Southern / African Exp. / B.M. 1972-1' (BMNH); 5♂ 3♀ **paratypes**, 'S.W. Africa (W34) / Regenstein, 15 mls., / SSW. Windhoek, / 7.ii.1972', 'Southern / African Exp. / B.M. 1972-1' (BMNH); 2♂ 2♀ **paratypes**, 'Arnhem 222 / SE 2218 Ca / Windhoek / 16 Feb. 1971', 'H1831' (NMNW); 1♂ **paratype**, 'South West Africa / Gobabeb [23°33'S 15°02'E] 8.II.1978 / Kuiseb River flowing / O. Lomholdt le.g.' (UZMD); 1♂ **paratype**, 'Swartbaas West 276 / Keetmanshoop / Se 2619 Dc / 19-22 Apr. 1972', 'H11129' (NMNW).

Other material: NAMIBIA: 1♂ 'Otjimbumbe [17°24'S 14°25'E] / Kunene Riv. / Mar. 1923' ~ 'S. W. Africa / Mus. Exped.' (SAMC); 1♂ 2♀, 'Kaross [Stream – 19°30'S 14°20'E] / S.W.A.' ~ 'Mus. Exped. / Feb. 1925' (SAMC); 1♂ 2♀, 'Kamanyab [Waterhole – 19°38'S 14°50'E] / S.W.A.' ~ 'Mus. Exped. / Mar. 1925' (SAMC); 1♀, 'Namibia 23.iii.1984 / 48km W Otavi. Road 69 / 19 35'S 16 55'E / Stuckenberg & Londt / Woodland with short / grass cover'; 2♂ 2♀, 'SWA / Outjo / IRC / 1916DA / 10.iii.79 / VB Whitehead' (SAMC); 1♂, 'Tsumeb [19°14'S 17°43'E] / S.W. Protec.' ~ 'R.W. Tucker / Dec. 1919' (SAMC); 1♂ 1♀, 'S.W. Protect. / Otjituo [19°40'S 18°36'E]' ~ 'RW Tucker / Jan. 1920' (SAMC); 1♀, 'Namibia 26.iii.1984 / 54km S Khorixas. Road / 76. 20 43'S 14 49'E / Londt & Stuckenberg / Roadside grass and / flowers, sandy area.; 1♀, 'Namibia 24.iii.1984 / 18km W Outjo. Rd 65 / 20 10'S 15 59'E / Stuckenberg & Londt / Acacia scrub. Open / sandy area with grass'; 3♀, 'Namibia 24.iii.1984 / 28km E Khorixas. Rd 65 / 20 16'S 15 12'E / Londt & Stuckenberg / Mixed Mopani woodland'; 1♀, 'Namibia: Gross / Barmen 20°S 16°E / 03.iii.1989 / L.E. Schoeman'; 1♂, 'Rehoboth [23°19'S 17°05'E] / S.W.A.' ~ 'Bell-Marley / Nov–Jan 1938' (SAMC); 1♂, 'Cayimaeis [?] / S.W.A.' ~ 'Mus. Exped. / Feb. 1925' (SAMC). SOUTH AFRICA: 4♂ 2♀, 'S Africa: N Cape #15 / 14km S of Hotazel / 27 19'S 22 54'E 1050m / Date: 14.iii.1991 / Londt & Whittington / Ga-Mogara River Bed'; 2♂ 4♀, 'S Africa: N Cape #18 / 15km W Olifantshoek / 27 55'S 22 38'E 1575m / Date: 15.iii.1991 / Whittington & Londt / Ricky, bushy valley'; 3♂ 3♀, 'S Africa: N Cape #16 / 5km W Olifantshoek / 27 57'S 22 42'E 1350m / Date: 15.iii.1991 / Londt & Whittington / *Acacia-Ziziphus* veld'; 1♂, 'South Africa: N Cape / Witsand Nature Reserve / 28°34.694'S 022°27.752'E / 160m J Londt & T Dikow / 31.i.-1.ii.2004 Brulsand / dune area. *Acacia* savanna'.

Type locality: Namibia: Gross Barmen Resort.

Distribution, phenology and biology (Tables 1–2, Fig. 146): Found widely in the central Nama-Karoo, Savanna parts of Namibia, and the Northern Cape province of South Africa. Specimens have been collected between December and April, usually in open woodland or savanna situations where dominant trees may include *Acacia* (various species), *Ziziphus mucronata* (Buffalo-thorn) and *Colophospermum mopane* (Mopane). Label data and personal experience show that the species is found resting on low vegetation in dry, sandy, or rocky situations. There are six Natal Museum prey records as follows: 2♂ 4♀ (26 km N Windhoek 6) – Coleoptera (Scarabaeidae 4, probably Curculionidae 2).

Similar species: A member of the large and widely distributed group of species possessing a poorly defined facial gibbosity. Although the species has a hypandrial shape quite similar to that of *genitalis*, these species are easily separated using other characteristics (e.g. the elongated epandrial lobes of *genitalis*). The most significant distinguishing feature is the trumpet-shaped aedeagal apex. While a few species (e.g. *lacertosus*) may have a slightly flared aedeagal tip, no other species approaches the condition found in *bykanistes*.

Gonioscelis ceresae Oldroyd, 1974

Figs 27–29, 150

Gonioscelis ceresae Oldroyd, 1974: 39 (Fig. 27 foreleg).

Redescription: Based primarily on holotype ♂ (BMNH).

Head: Antenna dark red-brown, setae mostly dark red-brown (a few brown-yellow dorsally). Facial swelling pronounced, mystax uniform shiny yellow. Frons and vertex red-gold pruinose. Ocellar tubercle apruinose with dark red-brown *oc*. Occiput silver pruinose except for extensive shiny areas dorsally behind vertex, setae yellowish. Proboscis and palpus dark red-brown with yellow setae.

Thorax: Dark red-brown, gold pruinose. Postpronotal lobes brown-orange, clearly contrasting with adjacent mesonotum, with many long yellow setae. Mesonotal setae yellow: *ac* not evident; approx. 5 pairs *dc*, a few small setae extending anterior of transverse suture; 3 weak *npl*; 3 weak *sa*; approx. 5 weak *pa*. Scutellum dark red-brown with orange margin and approx. 6 weak yellow *mrg sct*. Wing length 8 mm, membrane mostly brownish. Legs mostly orange except for anterior face of prothoracic femur which is partly brown-red. Prothoracic coxa black, gold pruinose, yellow setose; femoral spur sharply pointed (angle approx. 25°).

Abdomen: Tergites mostly dark red-brown, mostly silver-gold pruinose (central parts apruinose), setae yellow, long. Sternites mostly orange-brown, entirely apruinose, setae few, yellow, long.

Terminalia (Figs 27–29): Moderately short *ep* (proctiger projecting slightly beyond epandrial lobes), broad distally in lateral aspect (not obviously tapering distally), with minor setae in distal part; *gcx* with two projections and a group of long, well-developed setae distally; *hyp*, in ventral view, with maximum breadth slightly greater than maximum length, tapering quickly to well-defined, slightly club-shaped, short medial lobe.

Variation: A fairly uniform species showing little sexual dimorphism (setae of female generally shorter).

Type material (all seen): SOUTH AFRICA: 1♂ **holotype**, South Africa, Cape Prov, Ceres [33°22'S 19°19'E], xii.1924, R.E. Turner, BM 1925-44 (BMNH); 5♀ **paratypes**, same data as holotype (BMNH); 6♂ 7♀ **paratypes**, Ceres, xi.1920, R.E. Turner, BM 1920-497 (BMNH); 1♂ 1♀ **paratypes**, Ceres, 1500', xii.1920, R.E. Turner, BM 1921-38 (BMNH); 1♂ 3♀ **paratypes**, Ceres, 1–12.xi.1920, R.E. Turner, BM 1924-503 (BMNH).

Other material: SOUTH AFRICA: 1♂, 'Witzenberg Vall. [Pass 33°16'S 19°13'E] / 3,500 ft. / Ceres District, / Cape Province. / 21-23.xii.1920.', 'S. Africa. / R.E. Turner. / Brit. Mus. / 1921-38' (BMNH); 7♂ 9♀ , 'Upper Sources / Olifants River / Ceres [33°22'S 19°19'E] C.P.' ~ 'Mus. Exp. / Dec. 1949' (SAMC).

Type locality: South Africa: Western Cape, Ceres.

Distribution, phenology and biology (Tables 1–2, Fig. 150): Known only from the Ceres district of the Western Cape province of South Africa. This is an area within the Fynbos biome. The species has been collected in November and December.

Similar species: A species closely similar to *haemorhous*, *hispidus*, *pickeri* and *scapularis* in that males possess a single distomedial hypandrial projection. The hypandrium, however, is much shorter and stouter than that of the other species. It is possible that all these species are no more than geographical variants of one species, but more information is required before this can be ascertained. *G. melas* also has males with a single distomedial hypandrial process, but is otherwise different and is probably more closely related to *punctipennis* and its allies (see comment under *melas*).

Gonioscelis chloris sp. n.

Figs 11, 30–32, 151

Etymology: Gr. *Chloris* – Goddess of flowers. Refers to the type-locality of Clanwilliam, a centre renowned for its wild flowers.

Description: Based primarily on holotype ♂ (NMSA).

Head: Antenna dark red-brown, pedicel brown distally, setae pale yellow and white. Facial swelling pronounced, mystax confined to gibbosity, mostly black with a few white or pale yellow ones along epistomal margin. Frons and vertex black, weakly red-gold pruinose. Ocellar tubercle apruinose with black *oc*. Occiput black, silver pruinose except for extensive apruinose area behind vertex, setae short dark-brown dorsally, white centrally and ventrally. Proboscis and palpus dark red-brown, fine white setose.

Thorax: Dark red-brown (mesonotum) to black (pleura), silver (pleura) or red-gold (mesonotum) pruinose. Postpronotal lobes red-brown, not contrasting with immediately adjacent mesonotum, with approx. 10 white setae. Mesonotal macrosetae black: *a* approx. 7 pairs; approx. 15 pairs *dc* extending along entire length of mesonotum; 3 dark red-brown to black *npl*; approx. 4–5 *sa*; 3 *pa*. Scutellum dark red-brown to black, with 4 black *mrg sct*. Wing length 5.2 mm, membrane mostly pale brown-yellow with dark brown spots at major forks. Legs: Femora black with orange-brown distal ends, tibiae orange-brown (slightly darker distally), tarsi dark brown, setae mostly white (black ones on prothoracic spur and ventrally on tarsi). Prothoracic coxa black, apruinose except for distal part which is silver pruinose, white setose; femoral spur (Fig. 11) sharply pointed (angle approx. 20°).

Abdomen: Tergites black, silver pruinose hind margins, setae sparse white. Sternites blackish, apruinose, fine white setose.

Terminalia (Figs 30–32): Moderately short *ep* (proctiger projecting slightly beyond epandrial lobes), tapering slightly distally in lateral aspect, with minor setae distally; *gcx* with two projections and a few fine setae distally; *hyp*, in ventral view, broader than long, tapering slightly to two widely-separated lobes (allowing clear view of aedeagus).

Variation: A uniform species. The single known female is somewhat bigger than the males (wing length approx. 7.2 mm) indicating that there may be some sexual dimorphism relating to size. A larger sample will however be required to verify this.

Type material: SOUTH AFRICA: 1♂ **holotype**, 1♂ 1♀ **paratypes**, 'Sth Africa: Cape Prov / 4km SW Clanwilliam / 32°11'30"S:18°52'20"E / 28.viii.1989 225m / J Londt B Stuckenberg / & P Croeser Sandy E / slope macchia nr dam'; 1♂ **paratype**, 'Sth Africa Cape Prov / 30km S Clanwilliam / 3218BD 31.viii.1981 / J. Londt, L. Schoeman / and B. Stuckenberg. / Karroid broken veld'.

Type locality: South Africa: Western Cape, 4 km SW Clanwilliam.

Distribution, phenology and biology (Tables 1–2, Fig. 151): Restricted to the Fynbos biome in the area west and south of Clanwilliam (i.e. western side of Cedarberg mountains). All four known specimens were collected in August. The species lives in a winter-rainfall area well-known for insect activity at that time of year, before what is often a hot and dry summer. The specimens were collected in an area with sandy soil supporting a vigorous growth of macchia/fynbos vegetation. The specimens were resting on large boulders.

Similar species: Closely related to other spotted-winged species from the south-western parts of South Africa (i.e. *exouros*, *kedros*, *punctipennis*). The species was found at a similar time of year and only a few kilometres from the only known localities for *kedros* which are on the eastern slopes of the Cedarberg mountains. There are small, but consistent morphological differences between males that currently support the separation of these two species. However, the paucity of material indicates that the status of these two species requires confirmation through further collecting.

Gonioscelis congoensis Oldroyd, 1970

Figs 33–35, 144

Gonioscelis congoensis Oldroyd, 1970: 277–278 (Fig. 50a ♂ gen.).

Redescription: Based on holotype ♂ (MRAC).

Head: Antenna dark red-brown to black, setae dark brown. Facial swelling silver-gold pruinose, poorly developed, mystax uniform pale yellow. Frons and vertex strongly gold pruinose. Ocellar tubercle black, weakly gold pruinose, with dark red-brown to black *oc*. Occiput entirely silver-gold pruinose, setae pale yellow. Proboscis and palpus dark red-brown to black with yellow setae except for those on second palpal segment that are brown.

Thorax: Dark red-brown to black, uniformly gold pruinose. Postpronotal lobes brown-orange, clearly contrasting with adjacent mesonotum, and with long yellow setae. Mesonotal setae yellow: *ac* not evident; approx. 5 pairs *dc*, a few extending anterior of transverse suture; 2 *npl*; 2–3 *sa*; 3 *pa*. Scutellum black, silver-gold pruinose with 4 yellow *mrg sct*. Wing length 7.6 mm, membrane mostly pale brown. Legs mostly brown-orange with yellow setae (except for dark red-brown ones on prothoracic spur and tarsi), trochanters orange-brown, femora darker dorsally, fore femur dark red-brown basally, but orange ventrally (i.e. area of spur), tibiae and tarsi brown-yellow. Prothoracic coxa black, silver-gold pruinose, white-yellow setose; femoral spur moderately pointed (angle approx. 40°).

Abdomen: Tergites mostly dark red-brown, mostly silver pruinose, yellow setose. Sternites similar to tergites.

Terminalia (Figs 33–35): Long *ep* (lobes projecting well beyond proctiger), lobes tapering distally in lateral aspect, each with a group of 3–4 well-developed medially-directed macrosetae distally; *gcx* with two projections and a single macroseta distally and a somewhat projecting ventrodistal flange; *hyp*, in ventral view, slightly longer than broad, tapering to two moderately separated terminal lobes each bearing a small group of macrosetae.

Variation: I am unable to assess this as I have studied only the holotype.

Type material (only holotype seen): DR CONGO (Lulua): 1♂ **holotype**, ‘Coll. Mus. Congo / Luluabourg [05°54'S 22°25'E], 21.v.1939 / J. J. Deheyn’ (MRAC). 1♂ **paratype**, Luluabourg, 18.v.1912, P. Callewaert (MRAC); 1♀ **paratype**, Wombali [03°16'S 17°20'E], vi.1913, P. Vanderijst (MRAC); 1♀ **paratype**, Manyema [? Maniema – 01°11'S 28°37'E], R. Mayné (MRAC); 1♀ **paratype**, Bolobo [02°10'S 16°14'E], Makamandulu, 1938, Dr Schouteden (MRAC).

Type locality: Democratic Republic of the Congo: Luluabourg.

Other material: DR CONGO: 1♀, 'Near Lualaba R., [09°43'S 28°39'E] / Katanga District, / Congo Free State: / between 9° & 10°S. Lat. / Jan. 1907. / Dr. A. Yale Massey. / 1907-126.' (BMNH).

Notes: The holotype is not in perfect condition, the thorax is damaged and the right mesothoracic leg is missing. The head is also cracked in the dorsal region of the right eye. The legs are bunched up making complete examination difficult. In the absence of male specimens the 'Near Lualaba' female can only be assigned provisionally to this species.

Recorded material not studied: I have not seen any paratypes and query identification of the female specimens in the absence of associated males.

Distribution, phenology and biology (Tables 1–2, Fig. 144): Only five specimens, from four localities in the DR Congo are recorded, collected in May and June (late summer in a tropical environment).

Similar species: A member of the large and widely distributed group of species possessing a poorly defined facial gibbosity. The species resembles other species possessing an elongate hypandrium, but is otherwise distinctive.

Gonioscelis cuthbertsoni sp. n.

Figs 7, 13, 36–38, 146

Etymology: Named after Alexander Cuthbertson who contributed to our knowledge of Zimbabwean asilids.

Description: Based primarily on holotype ♂ (NMSA).

Head: Antenna brown-yellow, setae yellow-brown. Facial swelling poorly developed, mystax uniform pale yellow-white, present on gibbosity and immediately below antennal sockets. Frons and vertex strongly gold pruinose. Ocellar tubercle largely apruinose with yellow *oc*. Occiput strongly gold pruinose with silver eye margins, setae pale yellow-white. Proboscis and palpus dark red-brown, white setose.

Thorax: Mesonotum brown-yellow with dark red-brown medial stripe and posterolateral spots, strongly silver-gold pruinose, pleura similar but with a dark red-brown anepisternal spot. Postpronotal lobes brown-yellow, not contrasting with adjacent mesonotum, with approx. 6 yellow macrosetae and smaller setae. Mesonotal setae yellow: *ac* not evident; approx. 8 pairs *dc*, just extending anterior of transverse suture; 3–4 *npl*; 3 *sa*; 3 *pa*. Scutellum brown-yellow, with 4 yellow *mrg sct*. Wing length 7.3 mm, membrane mostly pale yellow, microtrichia slightly darker brown at distal forks and crossveins giving wings a weakly spotted appearance. Legs: Yellow except for brown area anteroproximally on prothoracic femur, setae yellow except for a few dark red-brown ones on spur and ventrally on some tarsomeres. Prothoracic coxa brown-yellow, thinly gold pruinose, pale yellow-white setose; femoral spur (Fig. 7) moderately pointed (angle approx. 45°).

Abdomen: Tergites yellow, thinly silver-gold pruinose, yellow setose. Sternites similar to tergites.

Terminalia (Figs 36–38): Lobes of *ep* project distally to about the same level attained by proctiger, lobes tapering distally in lateral aspect, each with fine setae distally; *gcx* with two long projections, the ventral one with a few moderately developed macrosetae ventrally; *hyp*, in ventral view, clearly broader than long, tapering slightly to two well-separated terminal lobes each with fine setae.

Variation: The Angwa Bridge material appears to have been mounted from alcohol as a small degree of distortion is evident. A reasonably uniform species. Some topotypic specimens have dark red-brown ocellar setae. There is a degree of variation in the extent of dark red-brown coloration on mesonotum and legs.

Type material: ZIMBABWE: 1♂ **holotype**, 1♂ 1♀ **paratypes**, 'Zimbabwe #2 / 7km SE Angwa Bridge / 16 08'S 30 15'E / Date: 27.viii.1988 / R. Peveling & J. Weyrich'; 1♂ 1♀ **paratypes**, 'Zimbabwe #3 / 7km SE Angwa Bridge / 16 08'S 30 15'E / Date: 10.ix.1988 / R. Peveling & J. Weyrich'; 4♂ **paratypes**, 'Zimbabwe #4 / 7km SE Angwa Bridge / 16 08'S 30 15'E / Date: 2.viii.1988 / R. Peveling & J. Weyrich'; 1♀ **paratype**, 'Zimbabwe #5 / 7km SE Angwa Bridge / 16 08'S 30 15'E / Date: 19.viii.1988 / R. Peveling & J. Weyrich'; 1♂ **paratype**, 'Zimbabwe #5 / 7km SE Angwa Bridge / 16 08'S 30 15'E / Date: 3.ix.1988 / R. Peveling & J. Weyrich'; 1♂ **paratype**, 'Zimbabwe #8 / 7km SE Angwa Bridge / 16 08'S 30 15'E / Date: 5.ix.1988 / R. Peveling & J. Weyrich'; 2♀ **paratypes**, 'Odzi [18°58'S 32°23'E] / Umtali District / S. Rhodesia / Aug. 1931 / P.A. Sheppard'; 1♀ **paratype**, 'S. Rhodesia / Hopefountain [Hope Fountain 20°16'S 28°39'E] / 30.8.22 / Roy Stevenson'; 1♀ **paratype**, 'Hopefountain / S. Rhodesia / 12.ix.1922 / Swinburne & / Stevenson.', '2 / 3245'.

Other material: ZIMBABWE: 1♂, 'Mazoe River / Shamva [17°19'S 31°34'E] / S. Rhodesia / Dept. Agric. / 1/9/1935', 'W.C. Williams / Collector' (NMNH); 1♀, 'Gota Gota [Hill 17°18'S 31°54'E] / Urungwe / Dept. Agric. / S Rhodesia / 17/9/1938', 'W.L. Williams / collector', '*Gonioscelis* / *submaculatus* / Speis. / det. E.O. Engel' (ZSMC); 1♂, 'Triangle [21°02'S 31°27'E] / So. Rhod. / No. 119 / 19-ix-1963 / Coll. A.L. Moore' (NMNH); 1♀, 'Triangle / So. Rhod. / No. 120 / 19-ix-1963 / Coll. A.L. Moore' (NMNH); 1♂ 1? (? ♀ in cop), 'Triangle / So. Rhod. / No. 144 / 19-ix-1963 / Coll. A.L. Moore' (NMNH); 1?, 'Triangle / So. Rhod. / No. 187 / 21-ix-1963 / Coll. A.L. Moore' (NMNH); 1♂, 'Triangle / So. Rhod. / No. 195 / 21-ix-1963 / Coll. A.L. Moore' (NMNH); 1♀, 'Triangle / So. Rhod. / No. 196 / 21-ix-1963 / Coll. A.L. Moore' (NMNH).

Type locality: Zimbabwe: 7 km SE Angwa Bridge.

Distribution, phenology and biology (Tables 1–2, Fig. 146): Known from a few savanna localities in Zimbabwe. Material has been collected in August and September (i.e. early spring in this summer-rainfall region). Cuthbertson (1939) published a brief comment, under the name *submaculatus*, that I believe pertains to *cuthbertsoni,* as material collected by Williams at Gota-Gota (see above), and incorrectly identified by Engel as *submaculatus*, has been studied and confirmed as belonging to *cuthbertsoni*. His entire comment is cited here – 'Widely distributed in the low lying arid parts of the Colony [Zimbabwe, then Southern Rhodesia], and common in the late dry season during August and September. The flies rest on the ground and attack passing insects. *Prey*: male with small fly, *Gobertina picticornis* Big. (*Stratiomyiidae*) in September, 1938, at Gota-Gota camp, Urungwe (W. L. Williams).'

Similar species: A member of the large and widely distributed group of species possessing a poorly defined facial gibbosity. The short hypandrium with widely separated apical lobes is distinctive and separates the species from all others. The species has weakly spotted wings like those of *tomentosus*.

Gonioscelis engeli sp. n.

Figs 39–41, 147

Gonioscelis setosus: Engel 1925: 171–172 (Fig. 6 ♂ genitalia) not as Wiedemann 1824.

Etymology: Named after Dr E. O. Engel in recognition of his excellent pioneering work on *Gonioscelis*.

Description: Based primarily on holotype ♂ (NMSA).

Head: Antenna dark red-brown to black, setae dark red-brown and dull yellow. Facial swelling moderately developed, without obvious point at which dorsal region terminates below antennal sockets, mystax dull yellow-white, a few small setae on face between gibbosity and antennal sockets. Frons and vertex dull-gold pruinose. Ocellar tubercle gold pruinose with black *oc*. Occiput mainly gold pruinose, but silver along eye margins, setae dorsally and centrally black (a few yellow-brown), ventrally white. Proboscis and palpus dark red-brown, pale yellow setose.

Thorax: Dark red-brown to black, red-gold and gold-silver pruinose (patterned). Postpronotal lobes brown, contrasting slightly with adjacent mesonotum, with 5–6 black moderately well-developed setae and a few smaller white setae. Mesonotal setae: *ac* strong black anterior of suture, weaker black postsuture; approx. 30 pairs *dc* black (a few white posteriorly), extending full length of mesonotum; 3 black *npl*; 5–6 black *sa*; 7 white *pa*. Scutellum dark red-brown to black, gold pruinose, with 4 black *mrg sct*. Wing length 7.6 mm, membrane dark brownish. Legs: Dark red-brown with areas of orange-brown as follows – prothoracic femur ventrally and anterodistally, prothoracic tibia anteriorly, meso- and metathoracic femora dorsal and ventral stripes, macrosetae mostly dark red-brown (a few white), minor setae white. Prothoracic coxa dark red-brown to black, gold pruinose, white setose; femoral spur moderately pointed (angle approx. 50°).

Abdomen: Tergites dark red-brown to black, thinly gold and silver pruinose except for lateral parts that are shiny black apruinose, setae mostly yellowish. Sternites dark red-brown to black, almost entirely apruinose, white setose.

Terminalia (Figs 39–41): Long *ep* (lobes projecting beyond tip of proctiger), lobes tapering slightly distally in lateral aspect, each with a large group of well-developed, outwardly-directed macrosetae distally; *gcx* with three distal projections, the dorsal-most one has a rounded tip while others are closely associated and accompanied by a group of setae; *hyp*, in ventral view, broader than long, tapering—at first suddenly, and then gradually—to two closely situated terminal lobes, each bearing fine setae.

Variation: A species demonstrating little individual variation or sexual dimorphism.

Type material: SOUTH AFRICA: 2♂ 3♀ **paratypes**, 'Namaqual. / O'okiep. [29°36'S 17°52'E]' ~ 'R Lightfoot / Sep. '[18]90', 'Sammlung / F. Hermann' [on 1♂ only], '*G.* / *setosus* / Wd. / det. Engel', '*Gonioscelis* / *setosus* Wd. / det E.O. Engel ♂' (ZSMC); 1♀ **paratype**, 'O'okiep. / 6/10/[18]96', 'Sammlung / F. Hermann', '*Gonioscelis* / *setosus* Wd.' 'Namaqua / *Gonioscelis* / *setosus* Wd.', '*Gonioscelis* / *setosus* Wd. / det E.O. Engel ♀ ' (ZSMC); 1♂ 3♀ **paratypes**, 'STH AFRICA: N Cape / 7 km SSE Nababeep

/ 29°37'13"S:17°50'29"E / 24.viii.2002 JGH Londt / 1020m Rocky hillside / with sandy areas below'; 1♂ **holotype**, 2♀ **paratypes**, 'R.S.A.: N Cape #86 / Skilpad Nature Reserve / 30°10'S 17°47'E 700m / Date: 25.viii.1995 / Coll: J. & A. Londt / Old lands Rocky hill'; 1♂ **paratype**, '7m. S. of / Loeries- / fontein [30°58'S 19°27'E] / C.P.' ~ 'S.A.M. / 9:1961' (SAMC); 1♂ 2♀ **paratypes**, 'Knersvlakte [31°15'S 18°45'E] / Mus. Staff / Oct. 1939' (SAMC); 1♂ 3♀ **paratypes**, 'Knersvlakte / Namaqualand' ~ 'Mus., Expd., / Oct. 1950' (SAMC); 7♂ 8♀ **paratypes**, '5m. S. of / Van Rhyns / Pass [31°23'S 19°00'E] / C.P.' ~ 'S.A.M. / 9:1961' (SAMC).

Type locality: South Africa: Northern Cape, Namaqua National Park (a new reserve incorporating Skilpad Nature Reserve).

Other material: SOUTH AFRICA: 1♀, 'Knersvlakte' ~ '1.10.1966 / S.A.M.' (SAMC).

Taxonomic comments: Engel (1925) misidentified the material he listed under *setosus* as he had probably not examined the type. The species described and illustrated by him represents a taxon distinct from *setosus* (now a synonym of *hispidus*) and is named here.

Distribution, phenology and biology (Tables 1–2, Fig. 147): Known mainly from the Northern Cape province of South Africa, distribution being confined to the northern part of the west coast, an area within the Succulent Karoo biome and receiving winter rainfall. Material has been collected in August, September and October. Specimens were found on open ground in areas with macchia vegetation.

Similar species: A member of the large and widely distributed group of species possessing a poorly defined facial gibbosity, *G. engeli* occurs in an area dominated by species possessing pronounced gibbosities. The distinctive male genitalia appear most similar to those of *mantis*.

Gonioscelis exouros sp. n.

Figs 42–44, 151

Etymology: Gr. *exouros* – ending in a tail. Refers to the long proctiger that extends far beyond the tips of the epandrial lobes.

Description: Based on unique holotype ♂ (NMSA).

Head: Antenna black, apruinose except for silver pedicel, setae white. Facial swelling pronounced, mystax black with a few white ones in dorsal half (no setae between swelling and antennal sockets). Frons and vertex weakly gold pruinose. Ocellar tubercle apruinose with black *oc*. Occiput silver pruinose except for apruinose area behind ocellar tubercle, setae ranging from dark red-brown (few) and yellow dorsally, through yellow to white ventrally. Proboscis and palpus dark red-brown, yellow-brown setose.

Thorax: Black, silver and gold pruinose. Postpronotal lobes and posterior part of mesonotum orange, contrasting with rest of mesonotum, with pale yellow and white setae. Mesonotal setae: *ac* black, a few anteriorly and posteriorly only (central area without setae); approx. 18 pairs *dc* strong, black, clearly extending anterior of transverse suture; 3 yellow *npl*; 4–6 *sa*, yellow anteriorly black posteriorly; 3–4 black *pa*. Scutellum black, silver pruinose, with 5 black *mrg sct*. Wing length 7.5 mm, membrane mostly hyaline with dark brown microtrichia at crossveins (giving wings a spotted appearance). Legs: All femora dark red-brown with orange distal ends, tibiae yellow proximally red-brown distally, tarsi red-brown except for yellow pro- and mesothoracic basitarsi, setae white except for a few black ones on femoral spur, tibiae and tarsi. Prothoracic coxa black, silver pruinose, white setose; femoral spur sharply pointed (angle approx. 20°).

Abdomen: Tergites dark red-brown to black, weakly silver pruinose anteriorly (a little greasy), setae white. Sternites dark red-brown, largely apruinose, white setose.

Terminalia (Figs 42–44): Short *ep*, lobes tapering distally to setose tips; proctiger exceptionally long, jutting out well beyond tips of epandrial lobes, *gcx* distally with three dorsal projections and a few fine setae; *hyp*, in ventral view, approximately as broad as long, tapering moderately quickly to shallowly bilobed apex equipped with long fine terminal setae.

Variation: Unknown. Female unknown.

Type material: SOUTH AFRICA: 1♂ **holotype**, 'Sth Africa: Cape Prov / Richtersveld 1km N / Kuboes 1.ix.1989 200m / 28°25'30"S:16°59'30"E / J Londt B Stuckenberg / & P Croeser Rocky E / slope *Euphorbia* scrub'.

Type locality: South Africa: 1 km N Kuboes.

Distribution, phenology and biology (Tables 1–2, Fig. 151): Known only from the Richtersveld which falls within the Succulent Karoo biome. The single specimen was collected in September resting on a rock.

Similar species: The species is closely related to other spotted-winged species from the western parts of South Africa (*chloris*, *kedros*, *punctipennis*). It is most similar to *punctipennis*, also found in the Richtersveld, but the unique male has a distinctively enlaged proctiger that juts out posteriorly well beyond the epandrial lobes and is thus easily separated from males of *punctipennis*.

Gonioscelis feijeni sp. n.

Figs 45–47, 144

Etymology: Named for Dr Hans R. Feijen who collected the type specimens and donated many Diptera to the Natal Museum.

Description: Based primarily on holotype type ♂ (NMSA).

Head: Antenna dark red-brown (base of postpedicel orange-brown), setae orange. Facial swelling poorly developed, slight minor gibbosity just below antennal sockets, mystax orange, weaker in area between main gibbosity and antennal sockets. Frons and vertex thinly gold pruinose. Ocellar tubercle apruinose with dark red-brown to black *oc*. Occiput silver-gold pruinose except for two apruinose areas behind vertex, setae orange. Proboscis and palpus dark red-brown, orange setose.

Thorax: Dark red-brown to black, silver-gold pruinose. Postpronotal lobes not contrasting with adjacent mesonotum, with yellow-orange setae (a few well-developed). Mesonotal setae mostly orange-yellow: *ac* not evident; approx. 8–9 pairs *dc*, clearly extending anterior to transverse suture (those furthest forward are dark red-brown); 2–3 *npl*; 3–4 *sa*; 3–4 *pa*. Scutellum dark red-brown, strongly gold pruinose, with 4 orange *mrg sct*. Wing length 7.8 mm, membrane mostly pale brown-yellow. Legs: Prothoracic legs mostly orange with orange-yellow setae, femur with dark red-brown posterodorsal area proximally, mesothoracic legs similar but femur with small dark red-brown posterodorsal spot proximally, metathoracic legs similar but femur with tiny dark red-brown distal spot dorsally (at tip). Prothoracic coxa dark red-brown to black, strong gold pruinose, orange setose; femoral spur sharply pointed (angle approx. 30°).

Abdomen: Tergites dark red-brown anteriorly, T4 and beyond becoming increasingly orange posteriorly, gold pruinose, orange-yellow setose. Sternites similar to tergites.

Terminalia (Figs 45–47): Long *ep* (lobes projecting well beyond tip of proctiger), lobes almost parallel and tapering markedly distally in lateral aspect, each with a few well-developed, outwardly directed macrosetae distally (broken off in illustrated male); *gcx* with two distal projections, upper one large and curved lower one broadly rounded distally and with two macrosetae basally; *hyp*, in ventral view, slightly longer than broad, constricted at mid-length and broadly bilobed distally, lobes equipped with short setae.

Variation: A species showing little individual variation. Sexual dimorphism is evident in that females have a pale yellow mystax and more extensively dark legs.

Type material: MOZAMBIQUE: 1♂ **holotype**, 5♂ 7♀ **paratypes**, 'Moçambique / Nampula [15°07'S 39°15'E] baragem / 29-3-1982 / Coll. H. R. Feijen'.

Type locality: Mozambique: Nampula.

Distribution, phenology and biology (Tables 1–2, Fig. 144): Known only from one sample from the type-locality that is located within the vast Savanna biome. The material was collected in March (i.e. late summer in a summer rainfall region).

Similar species: A member of the large and widely distributed group of species possessing a poorly defined facial gibbosity. The species has distinctive male genitalia and is not easily confused with any other. The elongate, tapering, setae-tipped epandrial lobes suggest possible affinities with *nigripennis* and *tomentosus*.

Gonioscelis francoisi Oldroyd, 1970

Figs 48, 144

Gonioscelis francoisi Oldroyd, 1970: 278–279 (Fig. 51 ♂ gen.).

Redescription: Based primarily on holotype ♂ (ISNB).

Head: Antenna black, thinly red-gold pruinose, setae black. Facial swelling moderately developed, without obvious point at which dorsal region terminates below antennal sockets, mystax uniform dark red-brown to black, a good cluster of macrosetae just below antennal sockets. Frons and vertex black, thinly red-gold pruinose. Ocellar tubercle mostly red-gold pruinose with black *oc*. Occiput red-gold pruinose except for a pair of apruinose areas behind vertex, setae mostly dark red-brown or black (a few pale brown). Proboscis and palpus dark red-brown, with dark red-brown setae.

Thorax: Dark red-brown, red-gold pruinose. Postpronotal lobes not contrasting with adjacent mesonotum, with a cluster of black setae (a few pale brown). Mesonotal setae mostly black: *ac* not evident; approx. 5 pairs black *dc*, just extending anterior of transverse suture; 2 *npl* (missing, but sockets evident); 2–3 black *sa*; 2 brown-yellow *pa* (1 of 4 *pa* is black). Scutellum as mesonotum, with 2 black *mrg sct*. Wing length 7.1 mm, membrane mostly dark brown (a few cells have paler central areas). Legs: Brown-orange with dark red-brown areas (i.e. most of pro- and mesothoracic femora, except dorsodistal parts, entire metathoracic femur), setae mostly black. Prothoracic coxa black, red-gold pruinose, black setose; femoral spur moderately pointed (angle approx. 40°).

Abdomen: Entirely broken off and missing.

Terminalia: ♂ illustrated by Oldroyd (1970). Unfortunately the holotype and paratype ♂ are now without abdomens. The illustration provided by Oldroyd (1970), reproduced here for the reader's convenience (Fig. 48), almost certainly depicts structures that were not macerated. Features that appear diagnostic are as follows. Epandrium paler than preceding segments, apparently (see discussion of similar species below) long (i.e. lobes projecting beyond tip of down-curved proctiger), lobes tapering slightly distally in lateral aspect, each with a group of fine macrosetae distally; *hyp* fairly long and equipped with long macrosetae distally, appearing to have a structure similar to that seen in *nigripennis*. The *gcx* does not resemble any other species and may be poorly depicted.

Variation: The Kitega ♀ studied is similar to the holotype except for the following points: Postpronotal lobes largely orange-brown and contrasting with the mesonotum; the *dc* are more extensively developed (approx. 10 pairs along two-thirds of the mesonotum), legs generally paler (dark red-brown areas not as extensive), wings (7.4 mm) uniformly brown-yellow. Oldroyd (1970) has also drawn attention to the variation seen in the material from Kitega.

Type material: BURUNDI: 1♂ **holotype** (seen), 'Urundi : Kisenyi [02°30'S 30°11'E] / (Busoni) 17-xii.-1950, 1500m. F. François' (ISNB), 1♀ **paratype** (not seen), same data as holotype (repository unknown), 1♂ **paratype** (seen), Urundi : Kitega [Gitega – 03°26'S 29°56'E] / 21.x.1950 1700 m. / F. François (ISNB). 1♀ **paratype** (not seen), Kitega, 1720 m, 1.xii.1950 (repository unknown).

Type locality: Burundi: Kisenyi.

Notes: Types apparently originally in the collection of F. J. François, Brussels, are now in ISNB. Label data provided by Oldroyd (1970) are not entirely correct.

Distribution, phenology and biology (Tables 1–2, Fig. 144): Known from two localities in Burundi. Material has been collected in October and December.

Similar species: A member of the large and widely distributed group of species possessing a poorly defined facial gibbosity. It is difficult to establish possible relationships with other species as the male genitalia can now only be appreciated from the somewhat inadequate drawing by Oldroyd (1970). Although he states 'Male genitalia red, short, as in Text-fig. 51', the illustration (see reproduction supplied as Fig. 48) shows what appears to be a long, tapering, distally setose hypandrium resembling that of *nigripennis*. Oldroyd's use of the word 'short' must refer then to the epandrial lobes. His drawing shows an epandrium that terminates in what Oldroyd clearly interpreted as part of the proctiger. If this distal section is indeed part of the proctiger, it is exceptionally elongate and setose. As Oldroyd did not usually macerate genitalia, it is possible that some misinterpretation of these structures occurred. It is likely that the distal part of what Oldroyd believed to be the proctiger is an extension of the epandrium. A better assessment of this species and its relationships will only be possible when the holotype genitalia are found or topotypic males become available.

Gonioscelis genitalis Ricardo, 1925

Figs 49–51, 148

Gonioscelis genitalis Ricardo, 1925: 271–272; Oldroyd 1970: 277 (Fig. 50b ♂ gen.), 1974: 39 (Figs 28 ♂ gen., 30 foreleg).

Redescription: Based mainly on syntype ♂ (BMNH).

Head: Antenna dark red-brown, setae mostly dark red-brown (some shiny yellow-brown). Facial swelling moderately developed, with a second smaller protuberance between main gibbosity and antennal sockets, mystax pale yellow-white. Frons and vertex gold pruinose. Ocellar tubercle prominent, apruinose with dark red-brown *oc*. Occiput silver pruinose, setae pale yellow-white. Proboscis and palpus dark red-brown, white setose.

Thorax: Dark red-brown, silver-gold pruinose. Postpronotal lobes partly brown-yellow and contrasting with adjacent mesonotum, with long and short white setae. Mesonotal setae: *ac* not evident; *dc* badly damaged, but evidence of good series is present both posterior and anterior of suture, those posterior are pale yellow-white while those anterior of suture are dark brown; approx. 4 white *npl*; approx. 4 white *sa*; approx. 7 white *pa*. Scutellum greasy (colour difficult to ascertain), with approx. 8 white *mrg sct*. Wing length 9.4 mm, membrane pale yellow. Legs mostly brown-yellow, prothoracic femur mostly dark red-brown anteriorly, with posterodorsal dark red-brown band, tibiae brown-yellow dorsally dark red-brown ventrally (♂ syntype is missing the metathoracic legs). Prothoracic coxa dark red-brown, silver pruinose, white setose; femoral spur bluntly pointed (angle approx. 60°).

Abdomen: Tergites mostly dark red-brown, mostly thinly gold pruinose, setae shiny yellow, long, especially laterally. Sternites similar to tergites, but uniformly long setose.

Terminalia (Figs 49–51): Very long *ep* (lobes projecting far beyond tip of proctiger), lobes tapering gradually distally in lateral aspect, each with a small group of well-developed, inwardly directed macrosetae distally; *gcx* with two distal projections, lower one possessing a few macrosetae basally; *hyp*, in ventral view, much longer than broad, constricted at about mid-length and bilobed distally, lobes parallel and tipped with short but stout macrosetae.

Variation: Little individual variation or sexual dimorphism evident. Leg coloration may be somewhat variable in the degree to which they have dark markings.

Type material: NAMIBIA: 1♂ **syntype** (seen), 'Ongandjera [17°53'S 15°04'E] / Mar. 1923', ~ 'SW Africa, Mus. Exp.', 'Pres. Cape Mus 29.xi.1923' (BMNH); 1♀ **syntype** (seen), 'On~~dongua~~ olonga [i.e. name corrected to read Onolonga – 18°31'S 15°36'E] / April 1923' ~ 'SW Africa / Mus. Exped.', '*Gonioscelis* ♀ Type / *genitalis* / n sp Ricardo', 'Allo- / type', 'SAM-DIP / A008236' (SAMC).

Type locality: Namibia: Ongandjera.

Other material: ANGOLA: 1♂, 'Angola (A6) / Tundavala, / 9 mls. NW. Sa / da Bandiera [15°55'S 13°30'E] / 23 ii.1972', 'Southern / African Exp. / B.M. 1972-1' (BMNH). NAMIBIA: 2♂, 'Oshakati / Ovamboland, S.W.A. / SE 1715 Da / 5 May 1971', 'H2535' (NMNW); 1♂, 'S.W. Africa (W47) / 32 mls. SE. Ondangua [17°58'S 16°01'E] / 1.iv.1972', 'Southern / African Exp. / B.M. 1972-1' (BMNH). ZAMBIA: 1♂, 'G.H. Frank / N. R. [Northern Rhodesia = Zambia] / [illegible word]' (AMGS). ZIMBABWE: 1♂, 'Country Rhodesia / Loc. Kariba [16°31'S 28°48'E] / Date 14/iv/64 / Coll A.M.

Simmonds'; 1♀, 'Country Rhodesia / Loc. Kariba / Date 19/ii/64 / Coll A.M. Simmonds'; 1♂ 1♀, 'Country Rhodesia / Loc. Rekomitjie [16°08'S 29°24'E] / Date 17/iii/64 / Coll A.M. Simmonds'; 1♀, 'Country Rhodesia / Loc. Salisbury [Harare – 17°49'S 30°02'E] / Date April 1969 / Coll Fr Watsham'; 1♀, 'Salisbury /5000 feet, / Mashonaland. / Captured 1899 / & pres. 1902 by / G.A.K. Marshall.', 'Sammlung / F. Hermann', '*Gonioscelis* / *ventralis* Schin. / det. E.O. Engel ♀' (ZSMC); 1♀, 'Khami [Camp 19°58'S 27°27'E] /S Rhodesia / 22.4.1920 / Rhodesia / Museum', '*Gonioscelis* / *mantis* Lw ♀ / det. E.O. Engel' (ZSMC).

Recorded material not studied: Oldroyd (1974) records the species also from Harrismith, Bosrand (South Africa), Salisbury (Zimbabwe) and Zambia. His Salisbury (= Harare) material was probably correctly identified. The Harrismith material is probably that here listed under *mantis*, and I have not see any specimens labelled Bosrand.

Notes: As Ricardo (1925) designated two types, her specimens must be considered syntypes. There is no need at present to designate a lectotype. Ricardo also gives 'Olinga' as the locality of the ♀ syntype—this must be a misprint. The 2♀ identified by Engel are listed above with some hesitation in the absence of a male.

Distribution, phenology and biology (Tables 1–2, Fig. 148): The species is recorded from southern Angola, northern Namibia, Zimbabwe and Zambia between February and May. The considerable gap between the Namibian and Zimbabwean data can be explained by the general paucity of material from the intervening area. All records fall within the vast Savanna biome and so further records can be anticipated.

Similar species: A member of the large and widely distributed group of species possessing a poorly defined facial gibbosity. The species is one of three within this large assemblage that occur in southern Africa and have a hypandrial length greater than its width (the other two being *longulus* and *nigripennis*). *G. nigripennis* is a very distinctive species and so *genitalis* is probably more closely related to *longulus*, but can easily be distinguished using genital morphology.

Gonioscelis hadrocantha sp. n.

Figs 17, 52–54, 146

Etymology: Gr. *hadros* – well-developed, bulky, stout, strong, great + *akantha* – thorn, spine. Refers to the femoral spur that is uniquely equipped with a single large terminal macroseta that is accompanied by a few much smaller subapical macrosetae.

Description: Based primarily on holotype ♂ (BMNH).

Head: Antenna black, setae dark red-brown to black. Facial swelling poorly developed, mystax pale white-yellow on gibbosity, yellow-brown and shorter setae lie between gibbosity and antennal sockets. Frons and vertex thinly gold pruinose. Ocellar tubercle apruinose with dark red-brown *oc*. Occiput gold-silver pruinose except for two weakly apruinose areas behind vertex, setae shiny yellow. Proboscis and palpus dark red-brown to black, pale yellow setose.

Thorax: Blackish, mesonotum gold pruinose anteriorly and silver pruinose posteriorly. Postpronotal lobes blackish, not contrasting with adjacent mesonotum, with few long fine yellowish setae. Mesonotal setae pale yellow: *ac* not evident; approx. 5 pairs *dc*, just extending anterior of transverse suture; 2 *npl*; 3 *sa*; 3 *pa*. Scutellum black, silver pruinose, with 3 pale yellow *mrg sct*. Wing length 7.3 mm (paratypes 8.4 mm (♂), 9.9 mm (♀)), membrane mostly brown-yellow. Legs: Yellow except for coxae, trochanters, metathoracic femora (except tip) and anteroproximal part of prothoracic femora that are dark red-brown, setae mostly yellow (a few black ones associated with spur and ventrally on tibiae and tarsi). Spur with single large terminal upwardly-curved stout macroseta (Fig. 17) accompanied by a few much smaller spine-like setae. Prothoracic coxa black, silver pruinose, white setose; femoral spur moderately pointed (angle approx. 55°).

Abdomen: Tergites black, silver pruinose, setae short yellow. Sternites similar but with narrow medial apruinose strip.

Terminalia (Figs 52–54): Lobes of *ep* projecting to about same level attained by tip of proctiger, each lobe tapering gradually distally to about two-thirds its length before expanding slightly before somewhat truncate tip, each with a single large macroseta accompanied by smaller macrosetae and setae distally; *gcx* somewhat attenuate, with three distal projections (one very small) and a group of fine setae; *hyp*, in ventral view, longer than broad, tapering gradually distally to bilobed apex, lobes equipped with fine setae.

Variation: Little variation evident. The holotype is slightly smaller than the paratypes.

Type material: ANGOLA: 1♂ **holotype**, 1♂ 1♀ **paratypes**, 'Angola (A42) / Roçadas [16°43'S 15°01'E] / 30.iii.1972', 'Southern / African Exp. / B.M. 1972-1' (BMNH).

Type locality: Angola: Roçadas.

Distribution and phenology (Tables 1–2, Fig. 146): Known only from the type locality situated within the Savanna biome, where material was collected in March.

Similar species: A member of the large and widely distributed group of species possessing a poorly defined facial gibbosity. Although linked with other species possessing elongate hypandria (see key), the species has obvious similarities to *ventralis* in that the hypandrium, although much longer, has similarly shaped terminal lobes, and the epandrial lobes have similarly downturned apices. In other respects, however, these species are easily separable. *G. hadrocantha* is unique in having the prothoracic femoral spur tipped with a single large macroseta.

Gonioscelis haemorhous Schiner, 1867

Figs 55–57, 152

Gonioscelis haemorhous Schiner, 1867: 362–363.

Redescription: Based primarily on holotype ♀ (NHMW).

Head: Antenna mostly dark red-brown to black, distal end of pedicel and proximal end of postpedicel brown-yellow, setae mostly black (a few orange-brown). Facial swelling pronounced, mystax mostly white, but black dorsally (2 tiny brown setae lie between gibbosity and antennal sockets). Frons and vertex thinly gold pruinose. Ocellar tubercle apruinose with black *oc*. Occiput black, silver and gold-silver pruinose, yellow setose (paler ventrally). Proboscis and palpus dark red-brown with yellow setae.

Thorax: Dark red-brown to black, silver-gold pruinose. Postpronotal lobes brown-orange, clearly contrasting with adjacent mesonotum, with many strong and weak yellow setae.

Mesonotal setae: *ac* weak black along entire length; approx. 20 pairs *dc*, clearly extending anterior of transverse suture, mostly black (few orange posteriorly); 3–4 strong *npl* (mixed yellow, brown and black); 4–5 yellow, brown and black *sa*; approx. 6 yellow *pa*. Scutellum dark red-brown, silver-gold pruinose, with 4 brown-yellow *mrg sct*. Wing length 7.6 mm, membrane mostly brown-yellow. Legs mostly yellow-brown, but femora with dark red-brown parts. Prothoracic coxa dark red-brown, silver-gold pruinose, yellow setose; femoral spur sharply pointed (angle approx. 20°).

Abdomen: Tergites dark red-brown, gold-silver pruinose (edges apruinose), setae fine yellow uniformly distributed. Sternites similar to tergites.

Terminalia (Figs 55–57): Short *ep* (proctiger projecting beyond epandrial lobes), lobes almost parallel-sided in lateral aspect (i.e. not gradually tapering distally), each with a number of well-developed macrosetae distally; *gcx* with three distal projections, the most ventral equipped with a few fine setae; *hyp*, in ventral view, longer than broad, tapering to an almost club-shaped medial, setose lobe.

Variation: A moderately variable species. Mesonotal setae may vary by being black or yellowish, leg coloration also varies from almost entirely orange to almost entirely dark red-brown, the same is true for the colour of the terminal abdominal segments. Male genitalia are also somewhat variable. The width of the epandrium in lateral view varies slightly, while the length and shape of the hypandrium can also be somewhat variable.

Type material: SOUTH AFRICA: 1♀ **holotype** (seen), 'Cap.', '*haemorrhous* / Coll. Winthem', 'Type' (NHMW).

Type locality: Here fixed as South Africa: Western Cape, Stellenbosch.

Other material: SOUTH AFRICA: 1♂, 'Ysterfontein [= Yzerfontein 32°11'S 18°46'E]' ~ 'SAM / 9: 60' (SAMC); 3♂ 7♀, 'South Africa: Cape / 3km S Darling 3318AD / 28.ix.1979 J. Londt / Well veget. Hillside / above wheatlands'; 1♂, Malmasbu / ry [= Malmesbury 33°27'S 18°44'E] Cape / Dr Brauns / Sept 25 1926'; 1♂ 2♀, 'Stellenbosch [33°56'S 18°51'E] / Capland / Dr Brauns / xi.1924'; 1♂, 'Capland / Stellenbosch / Oct. 25 1926 / Dr H. Brauns'; 1♀, 'Capland / Stellenbosch / Nov. 15 1924 / Dr H. Brauns', '*Gonioscelis* / *setosus* Wd. / det. E.O. Engel ♀' (ZSMC); 1♀, 'Capland / Stellenbosch / 10.x.1925 / Dr H. Brauns', '*Gonioscelis* / *setosus* Wd. / det. E.O. Engel ♀' (ZSMC); 1♀, 'Capland / Stellenbosch / Oct 10 1926 / Dr H. Brauns', '*Gonioscelis* / *setosus* Wd. / det. E.O. Engel ♀' (ZSMC); 1♂ 2♀, 'Stellenbosch / Capland / 10.x.1925 / Dr H. Brauns'; 2♂ 3♀, 'Stellenbosch / Capland / Dr Brauns / 15.10.16'; 1♂ 1♀, 'Capland / Stellenbosch / Oct 10 1926 / Dr H. Brauns'; 1♂ 1♀, 'Capland / Stellenbosch / Oct 5 1926 / Dr H. Brauns'; 1♀, 'Capland / Stellenbosch / Oct 11 1926 / Dr H. Brauns'; 4♀, 'Capland / Stellenbosch / Oct 15 1926 / Dr H. Brauns'; 1♀, 'Capland / Stellenbosch / Oct 18 1926 / Dr H. Brauns'; 2♂, 'Capland / Stellenbosch / Oct 20 1926 / Dr H. Brauns'; 1♀, 'Capland / Stellenbosch / Nov 9 1926 / Dr H. Brauns'; 2♀, 'Capland / Stellenbosch / 25.xi.1925 / Dr H. Brauns'; 1♀, 'Capland / Stellenbosch / 1.xii.1925 / Dr H. Brauns'; 1♀, 'Capland / Stellenbosch / 5.xii.1925 / Dr H. Brauns'; 1♂, 'South Africa / Stellenbosch / 5.10.1928 / Ac. US.'; 1?, 'South Africa / Stellenbosch / 12.10.1938 / Ac. US.'; 1♂, 'South Africa / Stellenbosch / Sept. 1938 / Ac. US.'; 1♂, 'Stellenbosch / South Africa / 16th Oct. 1947 / J. E. Wicht'; 1♂, 'South Africa / St-bosch [= Stellenbosch]

/ 17.7.1942'; 1♀, 'South Africa / St-bosch / 8.7.1944'; 1?, 'South Africa / St-bosch / 5.8.1941'; 1♀, 'Stellenbosch / 15.10.46 / C. Steyn'; 1♀, 'J v. Wiel. / Stellb [= Stellenbosch] / 4-10-46'; 1♀, 'South Africa / Stellenbosch / 4 Okt 1930 / Ac. US'; 1♀, 'South Africa / Stellenbosch / 22 Okt 1929 / Ac. US'; 2♂, 'South Africa / Stellenbosch / Okt: 1947 / J.G. Theron'; 1♂, 'W Cape / Porterville / Grootfontein / 3219CC / 27 Oct 1995 / V.B. Whitehead (SAMC); 1♀, 'S Africa : Cape #34 / Paarl Mtn. Nature Res. / 33°44'S 18°57'E 360m / Date: 26.ix.1993 / Coll: J.G.H. Londt / Indigenous gardens'; 2♂ 2♀, 'Cold Bokkeveld [33°02'S 19°22'E] / Ceres Dist.' ~ 'M Veersfeld / 15-30 Oct. 1934' (SAMC); 6♂ 4♀, 'Sneeuwgat Valley / Tulbagh [33°17'S 19°09'E] Div.' ~ 'Museum Staff / Oct. 1934' (SAMC); 2♂ 3♀, 'Gt. Winterhoek Mts. / Tulbagh [33°17'S 19°09'E], C.P.' ~ 'K.H. Barnard / 4000 ft., Nov. 1932' (SAMC); 1♂ 2♀, 'Mitchells Pass [33°24'S 19°18'E] / Ceres Dist. / West Cape / 6 Oct 1959 / B & P Stuckenberg'; 1♂ 5♀, 'Mitchells Pass / Ceres Div.' ~ 'Museum Staff / Oct. 1934' (SAMC); 1♀, 'S Africa : Cape #33 / Karoo Botanic Garden / 33°37'S 19°27'E 210m / Date: 5.x.1993 / Coll: J.G.H. Londt / Worcester – Macchia'; 1♂, 'South Africa: Cape / 30km NE Wellington / Bainskloof Pass / 27.ix.1979 3319CA / J. Londt East slopes; 1♂, 'Sth Africa Cape Prov / Du Toitskloof summit / 3319CC 11.ix.1981 / J. Londt, L. Schoeman / and B. Stuckenberg. / Macchia – near tunnel'; 1♂ 4♀, 'Du Toits Kloof [33°44'S 19°11'E] / Paarl Dist. W Cape / 2000-3500 ft / 27-28 Sept. 1959 / B. & P. Stuckenberg'; 1♀, 'South Africa: Cape / 5km E Wellington on / Bainskloof Pass / 27.ix.1979 3319CA / J. Londt East slopes'.

Other recorded material: Oldroyd (1974) records the species from Namaqualand, O'okiep. His identification was certainly wrong as the species does not occur so far north. It is likely that the material he studied was that listed under *engeli* which was previously identified as *setosus* (now a synonym of *hispidus*).

Notes: Schiner (1867) gives 'Afrika' as provenance; the type is however clearly labelled 'Cap' thus limiting its origin to the south-western parts of South Africa. Three female specimens, identified by Engel as *setosus*, are listed above as it is likely that they were collected in the same area where Brauns obtained material now housed in the NMSA.

Distribution, phenology and biology (Tables 1–2, Fig. 152): Restricted to a relatively small area within the Fynbos biome, centred on the higher altitude areas around Stellenbosch in the Western Cape province of South Africa. This area experiences winter rainfall. The species, collected from July through to December, is most commonly encountered during September and October (the height of the rainy season). Individuals rest on or close to the ground in areas of indigenous vegetation. There are two Natal Museum prey records as follows: 2♀ (3 km S Darling 1; Karoo Botanic Garden 1) – Coleoptera (Scarabaeidae 2).

Similar species: A species similar to *ceresae*, *hispidus*, *pickeri* and *scapularis* in that males possess a single distomedial hypandrial projection. The hypandrium, however, has a characteristic form most closely similar to *pickeri*. It is possible that all these species are no more than geographical variants of one species, but more information is required before this can be ascertained. *G. melas* also has males with a single distomedial hypandrial process, but is otherwise different and is probably more closely related to *punctipennis* and its allies (see comment under *melas*).

Gonioscelis hispidus (Wiedemann, 1819)

Figs 58–60, 152

Dasypogon hispidus Wiedemann, 1819: 37–38.
Dasypogon setosus Wiedemann, 1824: 26–27 **syn. n.**
Gonioscelis setosus: Schiner 1867: 361–362
Gonioscelis melanocephalus Schiner, 1867: 363 **syn. n.**
Gonioscelis hispidus: Engel 1925: 172–173 (Fig. 7 ♂ gen.); Oldroyd 1974: 39.

Redescription: Based primarily on holotype ♂ (NHMW).

Head: Antenna entirely missing (*setosus* holotype – mostly dark red-brown except for orange junction between pedicel and postpedicel, setae dark red-brown to black). Facial swelling pronounced, mystax dark red-brown (approx. 5 tiny red-brown setae between gibbosity and antennal sockets). Frons and vertex gold pruinose. Ocellar tubercle apruinose with black *oc*. Occiput silver pruinose except for apruinose area posterior of vertex, setae black. Proboscis and palpus dark red-brown with fine red-brown setae.

Thorax: Dark red-brown to black, gold pruinose. Postpronotal lobes dark red-brown, but with orange-brown margin clearly contrasting with adjacent mesonotum, with many fine dark red-brown to black setae. Mesonotal setae black: *ac* weak along entire length, especially posterior of suture; approx. 20–25 pairs *dc*, clearly extending anterior of transverse suture; 4–5 *npl*; 5–6 *sa*; 6 *pa*. Scutellum dark red-brown to black, gold-silver pruinose, with 6 black *mrg sct*. Wing length 7.6 mm, membrane mostly orange-brown. Legs mostly yellow-brown, femora with dark red-brown parts. Prothoracic coxa dark red-brown to black, silver-gold pruinose, dark red-brown setose; femoral spur moderately pointed (angle approx. 35°).

Abdomen: Tergites mostly dark red-brown, silver pruinose except for apruinose edge, setae dark red-brown. Sternites similar to tergites but more weakly pruinose.

Terminalia (Figs 58–60): 'Cap b. sp.' ♂ holotype was macerated but found to be weakly sclerotised so drawings of an almost identical ♂ from the West Coast National Park are provided. Proctiger and epandrial lobes projecting to approximately the same level, lobes tapering distally, each with fine setae distally; *gcx* with three distal projections, most ventral equipped with a few fine setae; *hyp*, in ventral view, broader than long, tapering to a somewhat truncate end that is produced medially as a short, somewhat narrow lobe bearing fine setae.

Variation: A fairly variable species. Mesonotal setae may be either black or yellowish while leg colouration varies from almost entirely orange to somewhat brownish. The hypandrium may vary slightly in shape and in the size of the terminal lobe.

Type material: SOUTH AFRICA: 1♂ **holotype** (*hispidus* seen), 'Cap b. sp.', '*Goniosc.* / *Dasyp.* / *hispidus* W. / Coll. Winthem', 'Type' (NHMW); 1♂ **syntype** (*setosus* seen), 'D: n: sp: ex Cap. / b. sp:' '*Dasypog.* / *setosus* W. / Cap.' 'TYPE' (red) (UZMD); 1♂ **syntype** (*setosus* seen), 'Cap. b. sp.', '*Goniosc.* (*Dasy*) / *setosus* W. / Coll. Winthem.', 'Type' (red) (NHMW); 1♂ **holotype** (*melanocephalus* seen), 'Cap', '*melanocepha* / *lus* / Coll. Winthem', 'Type' (red) (NHMW).

Type locality: Here fixed as South Africa, Western Cape, West Coast National Park (as genitalia most closely resemble those of the holotype).

Other material: SOUTH AFRICA: 1♂, 'South Africa / Vredenburg [32°54'S 17°59'E] / 5-10-1935 / Ac. US.'; 2♂ 1♀, 'South Africa: W. Cape / West Coast National Park / 33°06'12"S:17°59'53"E 120m / JGH & A Londt 11.ix.2001 / Postberg – rocky hilltop area'; 1♀, 'Blaauwberg [33°44'S 18°28'E] / Oct. 1878' ~ 'Pres. by / R. Trimen', '*G. hispidus* / Wd. / det. Engel', '*Gonioscelis* / *hispidus* Wd. / det. E.O. Engel ♀' (ZSMC); 3♂ 3♀, 'Stellenbosch [33°56'S 18°51'E] / Capland / Dr Brauns / xii.1924'; 8♂ 3♀, 'Capland / Stellenbosch / 25.xi.1925 / Dr H. Brauns'; 1♀, 'Engel / 3', 'Stellenbosch / Cape Colony / Dr. Brauns / 15.10.16', '*Gonioscelis* / *hispidus* Fabr.' (ZSMC); 1♀, 'Capland / Stellenbosch / Nov. 2 1926 / Dr. H. Brauns.', 'Sammlung / E. Engel', '*Gonioscelis* ♀ / *hispidus* Wd. / det. E.O. Engel' (ZSMC); 1♀, 'Stellenb. / 1-19 [?] / S-J [?]', '*Gonioscelis* / *hispidus* ♀ Wd. / det. Engel' (ZSMC); 2♂ 2♀, 'Cape Town [33°55'S 18°25'E] / G. Peringuey / 1913' (SAMC); 3♀, Cape Town / G. Peringuey / Sept. 1913' (SAMC); 1♂, Cape Town / R. Lightfoot / Sep. 15 1920' (SAMC); 1♂, Cape Town / R. Lightfoot / Oct. 15 1920' (SAMC); 1♂ 1♀, 'Cape Town / G Peringuey / 1913', 'Pres. by / Cape Museum. / per G. Ricardo. / 3.111.1923' (BMNH); 1♂, 'Cape T. / 10.89' (BMNH); 1♂ 3♀, 'S. Africa / Cape Town / x.1937 / R.E. Turner (BMNH); 1♀, 'Cape / Town', '*Gonioscelis* / *hispidus* ♀ Wd. / det. E.O. Engel' (ZSMC); 1♂ 1♀, 'S. Africa. / R.E. Turner. / 1920-392.', 'Camps Bay, [33°57'S 18°22'E] / Cape Peninsula. / Sept. 1920.' (BMNH); 1♀, 'Hex R. [River 33°41'S 19°27'E] / 6.1.83', '*G.* / *phacopterus* / det. Engel / Schil.', '*Gonioscelis* / *phacopterus* ♀ / Schin. / det. E.O. Engel' (ZSMC); 1♂, 'Strand [34°07'S 18°50'E] / South Africa / 18-9-1947 / Dorrington J.E.'; 2♂ 5♀, 'Cape Peninsula / 13.v.1933 / R.E. Turner. / BM 1938-6' (BMNH); 2♀, 'P.N. / 8', 'Sammlung / F. Hermann [1♀ only]', '*Gonioscelis* / *hispidus* Wd. / det. E.O. Engel', 'Capland / *Gonioscelis* / *hispidus* / Wd. ♀ [1♀ only]' (ZSMC).

Recorded material not studied: Schiner (1867) records *setosus* from 'Cap der guten Hoffnung' (NHMW) while Engel (1925) records the following specimens of *setosus* 1♂, Capland, Berg. S. (ZMHB). 2♂ 3♀, Namaqualand, Sept. 1890, A. Lightfoot (ZSMC). For *hispidus* Engel (1925) records 2♀, Capland, Berg (ZMHB) and ♀ Natal. 8. – ♂ Port Natal (ZSMC) that were not included in the consignment of material sent to me by ZSMC. I do not accept the records of *hispidus* in KwaZulu-Natal. Engel (1929) recorded under *hispidus* '♀, Stellenbosch; 15.x.26; Dr Brauns, Willowmore'; I am not sure where this specimen is, but as there are specimens of *haemorhous* collected in Stellenbosch by Brauns on the date stated, I presume that Engel misidentified the recorded specimen. Oldroyd (1974) records the species also from Vanrhynsdorp and Klaver, but probably in error. *G. maculiventris*, excluded from his key, is superficially similar and is known from both these places.

Notes: Most of the ZSMC specimens listed above, some reported on by Engel (1925), are female. Engel's identifications are accepted except that of the Hex River female that was listed twice by Engel (under *phacopterus* and *maculipennis*). Wiedemann provides different and additional information for the *hispidus* type as follows 'Prom. bon. sp.' 'Herrn Pastor Hesse'. As this suggests that there may be other specimens which could be the real types, I checked with both UZMD and ZMHB (the usual alternatives for Wiedemann's specimens), but neither has *hispidus* material likely to have been studied by Wiedemann (despite Oldroyd's (1974) statement 'Type in Berlin'). I therefore consider the NHMW specimen to be the unique holotype, and that Wiedemann made an error in citing holotype data. I have seen two male 'types' of *setosus*, both labelled as from 'Cap. b. sp.' (Cape of Good Hope) – not 'Prom. bon. sp.' as indicated by Wiedemann (1824). While it is possible that Wiedemann studied both specimens, he ends his description by stating 'In Museo regio' which normally means the Royal Museum in Copenhagen (i.e. UZMD). I therefore suggest that the UZMD specimen be considered the holotype. It is not possible to state with certainty that Wiedemann's material was from the Cape Peninsula (= Prom. bon. sp.). While the two 'types' are very similar in appearance, the pins and labels are different suggesting that they may have been collected by different people and probably at different times and places. Schiner (1867) gives 'Afrika' as provenance for *melanocephalus*. The type however, is clearly labelled 'Cap' thus limiting the distribution to the south-western parts of South Africa.

Distribution, phenology and biology (Tables 1–2, Fig. 152): Known from relatively few low-altitude localities within the Fynbos biome of south-western parts of the Western Cape province of South Africa, a winter-rainfall area. Specimens have been collected from September through to January, although a single record for May exists. I have collected it resting on the ground on a rocky hillside.

Similar species: Similar to *ceresae*, *haemorhous*, *pickeri* and *scapularis,* in that males possess a single distomedial hypandrial projection. The hypandrium has however, a distinctive shape, featuring a short finger-like medial process mounted on a broader base. Like *pickeri*, the epandrial lobes gradually taper distally in lateral view. Possibly all these species are only geographical variants of one species, but more information is required before this can be ascertained. *G. melas* males also have a single distomedial hypandrial process, but are otherwise different and perhaps more closely related to *punctipennis* and its allies (see comment under *melas*).

Gonioscelis iota sp. n.

Figs 61–63, 150

Etymology: Gr. *iota* – anything very small. Refers to the small size of this species.

Description: Based primarily on holotype ♂ (NMSA).

Head: Antenna dark red-brown to black, setae black and white. Facial swelling pronounced, mystax mostly black, a few white setae centrally, confined to gibbosity. Vertex gold-silver pruinose. Ocellar tubercle apruinose with long black *oc*. Occiput silver pruinose, setae long black proclinate dorsally, pale yellow centrally, fine white ventrally. Proboscis and palpus black, with white setae.

Thorax: Dark red-brown, mesonotum gold-silver pruinose, pleura with silver pruinose and apruinose areas. Postpronotal lobes not contrasting with adjacent mesonotum, with brown, yellow and white setae. Mesonotal setae black: *ac* not clearly differentiated; approx. 10 pairs *dc*, extending anterior of transverse suture; 3 *npl*; 3 *sa*; approx. 7 *pa*. Scutellum dark red-brown, with 8 black *mrg sct*. Wing length 5.4 mm, membrane pale gray (not obviously coloured and lacking distinctive spots). Legs: Coxae, trochanters and femora black (distal tips of femora orange-yellow), tibiae orange with dark red-brown ventral parts, tarsi mostly orange (distal segments brown), setae white except for black setae associated with femoral spur. Prothoracic coxa black, silver pruinose, white setose; femoral spur bluntly pointed (angle approx. 65°).

Abdomen: Tergites black, silver-gold pruinose dorsally and along hind margins (laterally mostly shiny apruinose), setae white. Sternites black, apruinose, white setose.

Terminalia (Figs 61–63): Short *ep*, proctiger projecting beyond level attained by epandrial lobes, lobes hardly tapering distally, with fine setae distally; *gcx* with three distal projections, upper two closely associated while third is ventrally situated and seen as a broadly-rounded lobe, a few fine setae are associated with these projections; *hyp*, in ventral view, clearly broader than long, tapering quickly to a broadly-rounded apex equipped with fine setae.

Variation: A remarkably constant species showing virtually no individual variation. The single available female demonstrates no sexual dimorphism.

Type material: SOUTH AFRICA: 1♂ **holotype**, 4♂ **paratypes**, 'R.S.A.: N Cape #85 / 5 km N of Komaggas / 29°45'S 17°31'E 390m / Date: 24.viii.1995 / Coll: J. & A. Londt / Rocky slope Macchia'; 4♂ **paratypes**, 'South Africa, Cape Prov / Messelpadpas 25mi SSW / Springbok Sept. 7, 1972 / 1100ft, M.E. Irwin, 2917Dc / at stream seepage'; 3♂ 1♀ **paratypes**, 'Cape Province / Namaqualand / Springbok, Hester / Malan Nature Res. [= Goegap Nature Reserve 29°40'S 18°00'E] / 15-21.x.1987 / F.W. and S.K. Gess', 'at water' [♀ lacks this label] (AMGS); 2♂ 2♀ **paratypes**, 'Namaqualand / Bowesdorp [30°09'S 17°56'E] / S.A. Museum' ~ 'Museum Staff / Sept. 1941' (SAMC); 1♀ **paratype**, 'Swart Doring R. [= Swart Doringrivier 30°47'S 17°51'E] / Namaqualand' ~ '2-3.10.1966 / S.A.M.' (SAMC); 1♂ 1♀ **paratypes**, 'South Africa: W. Cape / 10km e. Kamieskroon / 17-x-1977. 3018AA / Ray M. Miller 630m'; 2♂ **paratypes**, 'Sth Africa Cape Prov / Studers Pass 22km NE / of Garies 3018AC / 6.ix.1983 J Londt & / B Stuckenberg Stream / edge & rocky slopes'.

Type locality: South Africa: Northern Cape Province, 5 km N of Komaggas.

Distribution, phenology and biology (Tables 1–2, Fig. 150): Known from a number of Northern Cape localities within an area of Succulent Karoo. Specimens have been captured during August, September and October, when the entire region is known for its abundant wild flowers. The species rests on boulders in areas of indigenous vegetation. There is one Natal Museum prey record as follows: 1♂ (Studers Pass) – Diptera (Rhagionidae).

Similar species: A small species clearly related to *punctipennis* and its allies (*chloris*, *exouros* and *kedros*). It occurs in similar environments and sympatrically with *punctipennis*. The wings lack the distictive spotting of the *punctipennis* group, while the hypandrium is relatively short and not bilobed mediodistally. Other species with which *iota* should be compared are *xanthochaites* and *melas*.

Gonioscelis kedros sp. n.

Figs 64–66, 151

Etymology: Gr. *kedros* – cedar. Refering to the occurrence of the species in the Cedarberg mountain range.

Description: Based primarily on holotype ♂ (NMSA) which is slightly teneral and a little greasy.

Head: Antenna dark red-brown, pedicel brown distally, setae pale yellow and white. Facial swelling pronounced, mystax confined to gibbosity, mostly black with a few white setae distributed in-between black ones. Frons and vertex black, weakly red-gold pruinose. Ocellar tubercle apruinose with black *oc*. Occiput black, silver pruinose although somewhat weakly behind vertex, setae short dark-brown dorsally, white centrally and ventrally. Proboscis and palpus dark red-brown, fine white setose.

Thorax: Dark red-brown (mesonotum) to black (pleura), silver (pleura) or red-gold (mesonotum) pruinose. Postpronotal lobes red-brown, somewhat contrasting with adjacent mesonotum, with approx. 10 white setae. Mesonotal macrosetae black: *ac* approx. 7 pairs; approx. 15 pairs *dc*, extending along entire length of mesonotum; 3 dark red-brown to black *npl*; approx. 5 *sa*; 4 *pa*. Scutellum dark red-brown to black, with 6 black *mrg sct*. Wing length 5.7 mm, membrane mostly pale brown-yellow with dark brown spots at major forks. Legs: Femora black with orange-brown distal ends, tibiae orange-brown (slightly darker distally), tarsi dark brown, setae mostly white (black ones on spur and ventrally on tarsi). Prothoracic coxa black, apruinose except for distal part which is silver pruinose, white setose; femoral spur sharply pointed (angle approx. 20°).

Abdomen: Tergites black, silver pruinose hind margins, setae sparse white. Sternites blackish, apruinose except for a small spot mediodistally, setae fine white.

Terminalia (Figs 64–66): Short *ep* (proctiger projecting beyond level attained by epandrial lobes), lobes hardly tapering distally, with fine setae distally; *gcx* with two dorsodistal projections, ventrodistal part as a broadly-rounded projection, a few fine setae are associated with these structures; *hyp*, in ventral view, clearly broader than long, tapering quickly to a broadly-rounded, trilobed distal end equipped with fine setae.

Variation: A constant species showing insignificant individual variation. Although the small sample of seven individuals includes only a single male, it appears that little sexual dimorphism exists.

Type material: SOUTH AFRICA: 1♀ **paratype**, South Africa, Cape Prov. / 2mi. NNE. Pakhuis Farm / Pakhuis Mts, Sept. 14, 1972 / ME&BJ Irwin, 1800ft, 3219Aa'; 1♂ **holotype**, 4♀ **paratypes**, 'Sth Africa: Cape Prov / NE slopes Pakhuis Mts / 32°07'00"S:19°03'00"E / J Londt B Stuckenberg / & P Croeser 6.ix.1989 / Rocky area ca 25km E / Clanwilliam 400m'; 1♀ **paratype**, 'Sth Africa: Cape Prov / Biedou Valley 300m / 32°06'00"S:19°19'00"E / J Londt B Stuckenberg / & P Croeser 6.ix.1989 / Rocky gentle N slope / Scrub & wild flowers'.

Type locality: South Africa: Pakhuis mountains, 25 km E Clanwilliam.

Distribution, phenology and biology (Tables 1–2, Fig. 151): Known only from the eastern slopes of the Cedarberg mountains in the Pakhuis Pass area, and adjacent dry Biedouw Valley, an area well known for its endemic fauna and flora.

Similar species: Closely related to other spotted-winged species from the south-western parts of South Africa (i.e. *chloris*, *exouros*, *punctipennis*). It is found at a similar time of year and only a few kilometres from the only known localities for *chloris*, which are on the western slopes of the Cedarberg mountains. There are small but consistent morphological differences between males of these two species that support their separation.

Gonioscelis lacertosus Engel, 1925

Figs 4, 67–73, 149

Gonioscelis lacertosus Engel, 1925: 166–167 (Fig. 1 ♂ gen.); Oldroyd 1974: 41.
Gonioscelis oculatus Engel, 1925: 175–176 (Fig. 8 ♂ gen.) **syn. n.**

Redescription: Based primarily on holotype ♂ (NMSA).

Head: Antenna mostly dark red-brown to black, setae mostly dark red-brown (dorsally a little paler). Facial swelling moderately to poorly developed, without obvious point at which dorsal region terminates below antennal sockets, mystax yellow (few smaller brown setae between antennal sockets and gibbosity. Frons and vertex apruinose. Ocellar tubercle apruinose with brown-yellow *oc*. Occiput silver pruinose with apruinose area behind ocellarium, fine yellow setose. Proboscis and palpus dark red-brown with thin pale yellow setae.

Thorax: Dark red-brown, gold-silver pruinose. Mesonotum orange-brown with 3 black longitudinal stripes; postpronotal lobes brown-orange, not clearly contrasting with adjacent mesonotum, with short yellow setae. Mesonotal setae yellow: *ac* not evident; approx. 4–5 pairs *dc*, weak, not extending anterior of transverse suture; 3 *npl*; 3 *sa*; 2–4 *pa*. Scutellum red-brown, with 3 weak yellow *mrg sct*. Wing length 8.4 mm, membrane mostly brown-yellow (little darker anteriorly). Legs uniform yellowish, mostly yellow setose (some black setae present). Prothoracic coxa dark red-brown, apruinose, black (distally) and yellow (proximally) setose; femoral spur moderately pointed (angle approx. 35°).

Abdomen: Tergites mostly orange, except for T1–2 which possess dark red-brown parts, mostly apruinose (small areas of silver pruinescence only), setae yellow, long especially laterally on T1–2. Sternites orange, apruinose except for tiny areas medially on hind margins, setae yellow, short.

Terminalia (Figs 67–69): Moderately short *ep* (lobes projecting to about same level attained by proctiger), lobes hardly tapering distally, with fine setae distally; *gcx* with two dorsodistal projections, ventrodistal part as a broadly-rounded projection with a few strong macrosetae; *hyp*, in ventral view, clearly broader than long, tapering quickly to a broadly-rounded distal end equipped with long setae arranged in two groups.

Variation: A variable species, showing local individual and geographical variation as well as some sexual dimorphism. Variation is particularly marked in the colour of almost all parts of the body. Variation in male genital morphology is also fairly marked (Figs 70–73), suggesting the possible existence of a group of closely related species.

Type material: SOUTH AFRICA: 1♂ **holotype** (*lacertosus* seen), 'Uniondale [33°39'S 23°08'E] / Capland / Dr Brauns / 25.12.09 [25.xii.1925]', '*Gonioscelis / lacertosus* Eng. Type 13', 'Type / *lacertosus*', '*Gonioscelis / lacertosus* / Engel / Type ♂' (NMSA). 1♀ **paratype** (not seen), Caffraria, Drège (ZMHB). 1♂ **paratype** (*lacertosus* not seen), Port Elizabeth [33°58'S 25°35'E], Drège (ZMHB); 1♂ **holotype** (*oculatus* seen), 'Willowmore [33°17'S 23°29'E] / Capland, Dr. Brauns / 15.11.16', 'Sammlung / E Engel', '*Gonioscelis* / *oculatus* / Engel', '*Gonioscelis* ♂ / *oculatus* Eng / det. E.O. Engel' (ZSMC); 1♀ **paratype** (*oculatus* seen), 'Willowmore / Capland / Dr. Brauns', 'Sammlung / F Hermann', 'Type von / *oculatus* / Engel / 1925' ~ 'Mitt. a. d. / Zool. Mus. / Berlin / 1925', '*Gonioscelis* / *oculatus* ♀ / Herm.' (ZSMC); 1♀ **paratype** (*oculatus* seen), 'Willowmore / Capland / Dr. Brauns', 'Sammlung / Hermann', '*Gonioscelis* / *oculatus* / Herm.', '*Gonioscelis* / *oculatus* Eng. / det. E.O. Engel' (ZSMC); 1♂ **paratype** (*oculatus* seen), 'Ladismith [33°29'S 21°16'E] / Cape Colony / Dr. Brauns', 'Sammlung / E. Engel', '*Gonioscelis* / *oculatus* ♂ / Eng. / det. E.O. Engel' (ZSMC).

Type locality: Here designated as South Africa: Western Cape, Uniondale.

Other material: SOUTH AFRICA: 2♂ 1♀, Knersvlakte [31°15'S 18°45'E] / Mus Staff / Oct. 1939' (SAMC); 1♂, 'Van Rhyn's- / Pass [31°23'S 19°01'E] , 4-5.11'33 [xi.1933] / G. van Son.'; 1♂ 2♀, 'Sth Africa: Cape Prov / Hantamsberg 3119BD / Date: 23.x.1986 / Coll: L. E. Schoeman'; 3♂ 3♀, 'Sth Africa: Cape Prov / Hantamsberg summit / 15.xi.1986 3119BD / Quickelberge & Londt / 1600m Rocky macchia'; 1♂, 'Sth Africa : N Cape / Hantamsberg summit / 31°20'57"S:19°48'17"E / 6.xi.2002 J.G.H. Londt / 1590m Karoo scrub nr / dams. Rocky area'; 1♀, 'Sth Africa : N Cape / Hantamsberg summit / 31°20'27"S:19°48'55"E / 6.xi.2002 J.G.H. Londt / 1500m Thick montane / veget. On pass to mast'; 1♂, 'Sth Africa : N Cape / Hantamsberg summit / 31°23'15"S:19°47'11"E / 6.xi.2002 J.G.H. Londt / 1600m Karoo scrub nr / radio mast. Rocky area'; 1♂ 1♀, 'Augusfontein [= Augustfontein 31°37'S 19°22'E] / (Calvinia) / C.P. / Mus. Exp., / Sept. 1947' (SAMC); 1♂ 1♀, 'Sth Africa: Cape Prov / Longhill Nature Res. / 5km N of Queenstown / 31°52'S 26°53'E 1350m / J. & H. Londt Acacia / savannah 3.xii.1989'; 1♀, 'South Africa: Cape / Prov. Queenstown / 31°54'S 26°53'E / 14.xi.1989 L. Schoeman'; 3♂ 7♀, 'Transkei: Cacadu River / nr. Lady Frere 3127CA / 27.x.1978 river bank / J. Londt & R. Miller'; 1♂, 'S Africa: N Cape #28 / Besemgoedkop 31 km N / of Sutherland 1670m / 32°11'21"S:20°36'03"E / 8.xi.1998 J&B Londt / Rocky ridge Macchia'; 5♂ 3♀, 'S Africa: Cape #74 / 31 km N of Sutherland / 32°11'S 20°36'E 1600m / Date: 6.xi.1991 / Coll: J.G.H. Londt / Besemgoedkop and area'; 2♂ 1?, 'S. Afr. C. P. / 29.7 km NW / Sutherland / 22 ix 85 / V B Whitehead', 'SAM', 'SAM-DIP / A008259' (SAMC); 2♂ 2♀, 'S Africa: Cape #73 / 18 km N of Sutherland / 32°11'S 20°43'E 1300m / Date: 5.xi.1991 / Coll: J.G.H. Londt / Renosterrivier area'; 4♂ 3♀, 'Cold Bokkeveld [33°02'S 19°22'E] / Ceres Dist.' ~ 'M. Versfeld / 15-30 Oct. 1934' (SAMC); 1♂, 'Cape Province: / Matjesfontein. [33°13'S 20°35'E] / 6-15.x.1928.', 'S. Africa. / R.E. Turner. / Brit. Mus. / 1928-480.' (BMNH); 1♀, 'Sth Africa: Cape Prov / 18km E of Sutherland / (Observatory) 3220BD / 18.xi.1986 1700m / Quickelberge & Londt / Rocky hillside bush'; 2♂, 'Cape Province / Worcester. [33°39'S 19°26'E] / Sept.-Oct. 1931.', 'S. Africa. / R.E. Turner. / Brit. Mus. / 1931-528.' (BMNH); 1♂, 'Sth Africa Cape Prov / Worcester –near dam / 33129CB [sic – 3319CB] 11.ix.1981 / J.Londt, L.Schoeman / and B.Stuckenberg / Karroid Broken Veld.'; 1♂ 1♀, 'Willowmore [33°17'S 23°29'E] / Capland / Dr Brauns / 15.10.11'; 2♀, 'Capland / Willowmore / 11 1907 / Dr Brauns'; 2♀, 'Willowmore / Capland / Dr Brauns / 1.11.09'; 1♀, 'Willowmore / Capland / Dr Brauns / 3 08'; 1♀, 'Willowmore / Capland / Dr Brauns / Oct 1917'; 1♀, 'Willowmore / Capland / Dr Brauns'; 2♂ 1♀, 'Klaarstroom / - Prince / Albert [33°13'S 22°03'E] / C.P.' ~ 'Mus. Expd. / Oct. 1952' (SAMC); 1♂ 1♀, 'Rust en Vrede / Oudtshoorn [33°35'S 22°12'E] Dist. / C.P.' ~ 'Mus. Expd., / Oct. 1951' (SAMC); 4♀, 'Sth Africa: Cape Prov / Karoo Nature Reserve / West of Graaff Reinet / 33°14'S 24°29'E 900m / J&H Londt Rocky slope / Savannah 7-8.xii.1989'; 1♂, 'Elandsberg Mts South / of Cockscomb Peak / Patensie area / 1.12.67 3424BD [sic 3324BD] / B&P Stuckenberg' [listed by Oldroyd (1974)]; 1♂ 8♀, 'So. Africa: Cape Prov. / 30km E. Kirkwood /

Suurberg 4.xi.1978 / 3325BD Londt & Miller / open hillside veget.'; 1♂ 1♀, 'South Afr: Cape Prov / 3km E Grahamstown / 3326BC 2&5.i.1986 / J. & B. Londt Belmont / Valley & Malaise'; 1♂, 'Cape Province / Grahamstown / 14.xi.1968 / J.G.H. Londt'; 6♂, 'South Africa, Cape Prov. / 7km SW Grahamstown / Faraway, 10-16.i.1984 / Brothers, Malaise trap'; 1♀, 'Cape Province / Hilton [33°15'S 26°21'E] / Grahamstown / 28.ii.1978 / F.W. Gess' [with prey: Diptera: Asilidae – *G. ventralis*] (AMGS); 2♂ 6♀, 'Cape Province / Hilton / Grahamstown / 6-xi-1981 / F.W. & S.K. Gess' (AMGS); 1♀, 'Cape Province / Hilton / Grahamstown / 2-i-1978 / F.W. Gess', 'Prey: / *Plagiolepis* / *steingroeveri* / Forel ♀ / det. F.W. Gess' (AMGS); 1♀, 'Cape Province / Hilton / Grahamstown / 17-iii-1978 / S/K. Gess', 'with prey: *Silpha* / *micans*' [Coleoptera: Sylphidae]' (AMGS); 1♂, 'Cape Province / Hilton / Grahamstown / 5-xi-1969 / F.W. Gess' (AMGS); 2♂ 2♀, 'Cape Province / Burntkraal [33°17'S 26°29'E] / Grahamstown / 4-xii-1969 / F.W. Gess' (AMGS); 1♂, 'Miss M. Daly & / Miss M. Sole / Grahamstown [33°18'S 26°32'E] / xi-[19]02', '33' (AMGS); 1♂, 'Cape Province / Strowan [33°18'S 26°28'E] / Grahamstown / 27.xi.1968 / F.W. Gess' (AMGS); 1♂, 'Cape Province / Strowan / Grahamstown / 9.xii.1968 / F.W. Gess' (AMGS); 2♂ 1♀, 'Cape Province / Strowan / Grahamstown / 7-i-1986 / D.W. Gess' (AMGS); 1♂, '2069 / Port Alfred [33°36'S 26°54'E] / Master R. / Graham / Jan. 1914' (AMGS).

Notes: Engel (1925), in designating 'types' and 'cotypes', was clearly aware of the need to select a unique reference specimen. I consider his 'type' to be the holotype and his 'cotypes' to be paratypes. In the case of *lacertosus* he lists two specimens under the heading cotype (singular). I consider both specimens to be paratypes. One of the *oculatus* females in ZSMC has a 'type' label, while the single male from Willowmore, listed by Engel as the 'type', has no appropriate label. I have rectified this omission. Engel (1925) lists as cotypes of *oculatus* the following specimens - '2♀ 'cotypes' from Ladysmith [sic. = Ladismith], ♀ Willowmore, Okt. 19, Dr. Brauns leg. (Eigene Samml.)' – I have seen a male from Ladismith (listed above) and assume it to be a paratype, but I do not know where the other material is presently housed.

Distribution, phenology and biology (Tables 1–2, Fig. 149): Widely distributed in higher altitude areas from the Van Rhyns Pass vicinity (Succulent Karoo) in the west, through the southern mountains of the Western and Eastern Cape provinces (largely Nama-Karoo and Fynbos) to the Queenstown area (Grassland / Savanna). Recorded from September through to March in dry areas receiving mostly summer-rainfall. I have collected individuals resting on the ground or low vegetation in rocky mountainous situations. The species apparently occurs sympatrically with *haemorhous* at Worcester (where fragments of Succulent Karoo occur in an area dominated by Fynbos). There are four Natal Museum prey records as follows: 3♂ 1♀ (Hantamsberg summit 1; 31 km N Sutherland 1; Cacadu River 1; 31 km E Kirkwood 1) – Coleoptera (Scarabaeidae 1, Coccinellidae 1, Undetermined 1), Isoptera (Termitidae 1).

Similar species: Although placed here as a member of the large and widely distributed group of species possessing a poorly defined facial gibbosity, it must be said that the facial condition can be somewhat intermediate between that seen in species like *hispidus* and *punctipennis*, and species with poorly developed gibbosities. The variable nature of this species makes an assessment of relationships difficult. Similarity to *phacopterus* needs particular note as future analyses would probably need to take this species into account. Unfortunately more material from many localities is needed to fully explain the variation that is presently accepted within *lacertosus*.

Gonioscelis longulus Ricardo, 1925

Figs 3, 12, 74–76, 148

Gonioscelis longulus Ricardo, 1925: 270–271; Hull 1962: 131–132 (Fig. 1561 foreleg); Oldroyd 1974: 41 (Fig. 31 foreleg).

Gonioscelis denticulatus Hull, 1967: 243–244 (Fig. 1. ♂ gen.) **syn. n.**

Redescription: Based chiefly on syntype ♀ (BMNH).

Head: Antenna missing (condition in other specimens – mostly dark red-brown to black, setae dark red-brown). Facial swelling moderately pronounced, with dorsal region well-developed and terminating rather abruptly a short distance from antennal sockets, mystax uniform yellow, a group of moderately developed setae between antennal sockets and gibbosity (Fig. 3). Frons and vertex gold pruinose. Ocellar tubercle thinly gold pruinose to apruinose with dark red-brown *oc*. Occiput silver-gold pruinose except for 2 apruinose areas behind ocellarium, setae pale yellow-white. Proboscis and palpus dark red-brown, yellow setose.

Thorax: Blackish, gold pruinose. Postpronotal lobes (and adjacent parts of mesonotum) brown-orange, clearly contrasting with mesonotum, with 2–3 short yellow setae. Mesonotal setae pale yellow: *ac* not evident; approx. 10 pairs *dc*, clearly extending anterior of transverse suture; 3 *npl*; 3 *sa*; 3–4 *pa*. Scutellum dark red-brown to black, with 6 pale yellow *mrg sct*. Wing length 10.6 mm, membrane mostly yellow (darker yellow-brown posteriorly). Legs mostly orange except for brown-red area associated with femoral spur. Prothoracic coxa dark red-brown, silver-gold pruinose, yellow-white setose; femoral spur (Fig. 12) sharply pointed (angle approx. 25°).

Abdomen: Tergites mostly dark red-brown, T4–5 with increasing amounts of orange dorsally, T6–7 entirely orange, mostly thinly gold pruinose, setae yellow, short except for some long ones on T1–2. Sternites similar to tergites, S2–5 apruinose medially, S6–7 entirely apruinose, setae yellow, short.

Terminalia (Figs 74–76): Long *ep* (lobes projecting beyond level attained by proctiger), lobes tapering slightly distally and exhibiting an undulating ventral margin in lateral view, tips equipped with long, strong, macrosetae; *gcx* with three distal projections and a few fine setae; *hyp*, in ventral view, longer than broad, somewhat constricted at mid-length and distally bilobed, each lobe equipped with short, strong macrosetae.

Variation: A fairly uniform species showing little individual variation or sexual dimorphism.

Type material: LESOTHO: 1♂ **holotype** (*denticulatus* not seen), 'Qachas Nek [30°07'S 28°42'E], 20 mi. north of Matatiele, 7.3.1951, loc. No. 213 (Brinck and Rudebeck)' (as cited by Hull, 1967). SOUTH AFRICA: 1♂ **syntype** (*longulus* seen), 'M'fongosi [28°42'S 30°48'E] / Zulu L. [Zululand] / W E Jones' ~ 'April / 1916', '*Gonioscelis longulus* / Type n sp. ♂ / Ricardo', 'Holo- / type.', 'SAM-DIP A008245' (SAMC). 2♀ [1 now without abdomen] **syntypes** (*longulus* seen), same data but 'Mch. 1917' and labelled paratypes (SAMC); 1♀ **syntype** (*longulus* seen), same data (BMNH).

Type locality: South Africa: KwaZulu-Natal, M'fongosi.

Other material: LESOTHO: 1♂, 'Peka [28°51'S 28°12'E] / Basutoland / 12-iii-1948 / C. Jacot- / Guillarmod' (NMNH); 1♀, 'Peka / Basutoland / 12-iii-1948, C. Jacot- / Guillarmod' (AMGS); 1♀, 'Hensley's Dam, Leribe [28°53'S 28°03'E] / Basutoland / 29.ii.1948 / C. Jacot- / Guillarmod' (NMNH); 6♂ 5♀, 'Mamathes [29°08'S 27°51'E] / Basutoland / 14.iii.1948 / C. Jacot / Guillarmod' (NMNH); 1♀, 'Mamathes / Basutoland / 4.iv.1948 / C. Jacot / Guillarmod' (NMNH); 6♂ 6♀, 'Mamathes [29°08'S 27°51'E] / Basutoland / 3-iii-1951 / C. Jacot / Guillarmod' (AMGS); 1♂, 'Mamathes / Basutoland / 12-iii-1950 / C. Jacot / Guillarmod' (AMGS); 1♂, 'Mamathes / Basutoland / 7-iv-1950 / C. Jacot / Guillarmod', 'with prey' [Coleoptera: Chrysomelidae] (AMGS); 2♀, 'Mamathes / Basutoland / 13-iii-1949 / C. Jacot / Guillarmod', 'with prey' [Hymenoptera: Formicidae, alate 2] (AMGS); 3♀, 'Mamathes / Basutoland / 21-iii-1948 / C. Jacot / Guillarmod', 'with prey' [Hymenoptera: Formicidae, alate 2; Tenthredinidae 1] (AMGS); 1♀, 'Mamathes / Basutoland / 29-iii-1948 / C. Jacot / Guillarmod', 'with prey' [Hymenoptera: Formicidae, alate] (AMGS). SOUTH AFRICA: 1♂ 1?, 'Zoutpansberg / Louis Trichardt [23°03'S 29°54'E] / Tvl.' ~ '4500ft / RF Lawrence / Feb. 1928' (SAMC); 1♂ 2♀, 'On small rock / after rains 15.4.79 / midday; Tongwane [Stream 24°13'S 29°54'E]'; 1♂, 'Sth Africa: Transvaal / Bourkes Potholes. 60k N / Grasskop. SE2430DB / Date: 14.iv.1985 J+B Londt'; 1♂ 3♀, 'Sth Africa: Transvaal / 10km E of Barberton / on Saddleback Pass / 7.iv.1985 SE2531CC / J. Londt Rocky slope'; 1♀, 'South Africa: Natal / nr Itala Game Reserve / ca. 27°32'S 31°19'E / Acacia grassveld Dry / hillside/ stream edge / JGH Londt 21.iv.1988'; 1♀, 'South Africa OFS / Entembeni Mission / 28°10'S 25°40'E / Coll: P. E. Reavell / Date: 30.iii.1991 / Grassveld'; 2♂ 1♀, 'S Africa O.F.S. #6/ 36km E Bultfontein / 28 23'S 26 29'E 1350m / date: 11.iii.1991 / Whittington & Londt / nr. Vet River Branch'; 4♂ 6♀, 'South Africa O.F.S. / 10km E of Paul Roux / 2828Ac 16.iii.1982 / J. Londt & L. Schoeman / Scrub on rocky hill'; 1♀, 'South Africa O.F.S. / Golden Gate Nat. Park / 2828DA 27-8.iii.1982 / J. Londt & L. Schoeman / Valley nr. Stream.'; 2♂ 2♀, 'S Africa: Natal #12 / Royal Natal Nat. Park / 28°41'S 28°57'E 1440m / Date: 02-04.iv.1993 / Coll: J. G. H. Londt / Mahai Camp/grassland'; 2♂ 3♀, 'South Africa: Natal / Cathedral Peak area / 2829Cc 7-12 April 1982 / JGH Londt ex Malaise'; 2♂ 2♀, 'South Africa: Natal / Cathedral Peak area / Forest Reserve 1900m / 2829Cc 4-11.iv.1977 / JGH Londt'; 1♂, 'Cathedral Peak / Forestry Reserve / Natal Drakensberg / March 1959 / B.R. & P. Stuckenberg', 'Little Berg summits / *Themeda* grassland / 5500-6000 ft' [listed by Oldroyd (1974)]; 1♂, 'on *Protea caffra* leaf / Tarn Hill. 1725m / Cathedral Peak area, Natal Drakensberg / Natal South Africa / Pajor, Istvan (30/03/1989)'; 1♂, 'S Africa: KZ-Natal #13 / Isandlwana / 28°12'S 30°40'E 1500m / Date: 8.iv.1996 / Coll: P.E. Reavell / Highveld grass'; 1♂, 'South Africa / KwaZulu-Natal / Qudeni Forest Reserve / 28°39'49"S / 30°47'58"E / 11/4/2001', 'A. Armstrong & P. Ngwenya / NCS Record ID: 162187 / Grassland / Summit', '*Gonioscelis longulus* / Ricardo 1925'; 1♀ 2♂, 'M'fongosi [28°42'S 30°48'E] / Zululand' ~ 'WE Jones / Mar Apr. 1935' (SAMC); 2♂ 1?, same data as ♂ *longulus* syntype (SAMC); 1♂, 'M'fongosi / Zululand / WE Jones' ~ 'Mch. 1917' (SAMC); 1♂, 'M'fongosi / ZuluL / WE Jones' ~ 'May / 1917' (SAMC); 1♂ 1♀, M'fongosi / Zululand' ~ 'WE Jones / April-May 1934' (SAMC); 1♂ 1♀, 'South Africa: Natal / Die Kop 1131m ca. 11km / NE of Kranskop / 28°54'57"S:30°57'12"E / Grass & Forest Margin / Londt Whittington & / Chinn 17.iv.1990'; 1♀, 'South Africa: Natal / Die Kop Dist. 500m ca / 9km NE Kranskop / 28°55'51"S:30°56'51"E / Grass & Forest Margin / Londt Whittington & /

Chinn 17.iv.1990'; 1♂, 'Natal / Estcourt [29°00'S 29°53'E]' ~ 'E. Haviland / 1894', '*G. mantis* Lw / det. Engel', '*Gonioscelis* / *mantis* Loew ♂' (ZSMC); 1♀, 'RSA: KZ-Natal #16 / Injasuti Nature Res. / 29°12'S 29°22'E 1800m / Date: 27.iii.1994 / Coll: J.G.H. Londt'; 1♂ 1♀, 'R.S.A.: KZ-Natal #10 / Loteni Nature Reserve / 29°27'S 29°32'E 1560m / Date: 21.ii.1996 / Coll: J. & A. Londt / Emadundwini Trail'; 7♂ 11♀, 'South Africa: Natal / Loteni Nature Res. / 2929BC J. & B. Londt / 28.iii. – 2.iv.1986 / Campsite/ Grassveld'; 1♂, 'Sth Africa: KZ-Natal / Cobham Forest Reserve / 29°41'50"S:29°24'44"E / 1530m 24.ii.2000 / JGH Londt Grassland'; 2♀, 'South Africa: Natal / Krantzkop The Kop / 2930BB 8.iv.1986 / J. Londt Grassveld & / forest margins'; 1♀, 'South Africa: Natal / Cumberland farm / 29°30'56"S:30°30'55"E / Coll: S. A. Chinn / Date: 13.iii.1990'; 1♀, 'S Africa: E. Cape #2 / 37 km NE of Maclear / 30°53'S 28°11'E 1670m / Date: 3.ii.1992 Natal / Museum Expedition / Grassland and stream'; 1♂ 1♀, S Africa: Natal Prov / Ixopo Dist. [30°09'S 30°05'E] 6km SE / Highflats nr. Waterfall / 4.v.1991, N.Evenhuis, / R. Miller Collectors'; 1♂, 'Highflats [30°16'S 30°12'E] / Natal / 24.3.27 / L. Bevis' (ID *G. bevisi* sp. n. by Bromley 1945 – unpublished) (NMNH).

Notes: As Ricardo (1925) designated more than one type, all her specimens must be considered syntypes. There is no need for the designation of a lectotype. She listed only four specimens, so others in SAMC listed above are excluded from the syntype series. Although I have not seen the unique *denticulatus* holotype, Hull (1967) provides a good general description and illustration of the male terminalia that confirm the species to be the same as Ricardo's *longulus*.

Distribution, phenology and biology (Tables 1–2, Fig. 148): Found in the eastern Grassland areas of South Africa including the KwaZulu-Natal Midlands, Drakensberg Mountains of Lesotho, KwaZulu-Natal and Free State and adjacent areas, as well as the highlands of Mpumalanga. Recorded between February and May (late summer). There are three Natal Museum prey records as follows: 3♀ (Loteni Nature Reserve 2; 35 km E Bultfontein 1) – Coleoptera (Melyridae 1), Hemiptera (Alydidae 1), Hymenoptera (Formcidae 1). In addition, four prey records from Lesotho (AMGS) are included in the list of specimens provided above.

Similar species: A member of the large and widely distributed group of species possessing a poorly defined facial gibbosity. A quite distinctive species, occurring entirely within southern Africa, *longulus* is keyed as a member of a group of species having an elongate hypandrium and occuring mainly north of southern Africa. A similarity to *genitalis* is mentioned under that species. An apparent association with the higher altitude areas of the southern African Drakensberg/Maloti mountain range suggests that it could be related to other species in high-altitude afromontane situations further north (e.g. *macquartii*, *pruinosus* and possibly *submaculatus*).

Gonioscelis macquartii (Jaennicke, 1867)

Figs 14, 77–79, 144

Stenopogon macquartii Jaennicke, 1867: 358.
Gonioscelis xanthopogon Speiser, 1910: 91 **syn. n.**
Gonioscelis ventralis var *macquartii*: Engel 1925: 167.

Redescription: Based primarily on ♂ syntypes of *xanthopogon* (NHRS).

Head: Antenna dark red-brown to black, setae black. Facial swelling poorly developed, second smaller swelling in area between main gibbosity and antennal sockets, mystax uniform shiny orange, arranged on major and minor gibbosities. Frons and vertex gold pruinose. Ocellar tubercle shiny apruinose with black *oc*. Occiput gold-silver pruinose except for two apruinose areas behind vertex, setae orange. Proboscis and palpus dark red-brown, orange setose.

Thorax: Dark red-brown to black, gold pruinose. Postpronotal lobes orange, contrasting with adjacent mesonotum, orange setose. Mesonotal setae: *ac* not evident; approx. 11 pairs *dc*, mostly black (a few yellow posteriorly), clearly extending anterior of transverse suture; 3 orange *npl*; 3 *sa* (2 pale orange, 1 black); 4 pale orange *pa*. Scutellum dark red-brown to black, gold pruinose, with 6 pale orange *mrg sct*. Wing length 9.3 mm, membrane mostly brown-yellow. Legs: Orange except for red-brown areas (part of anterior face of prothoracic femur, most of anterior face of metathoracic femur), macrosetae mostly black but some are orange, fine setae orange. Prothoracic coxa black, gold pruinose, orange setose; femoral spur (Fig. 14) bluntly pointed (angle approx. 70°).

Abdomen: Tergites dark red-brown, thinly silver-gold pruinose, setae orange to yellow. Sternites similar to tergites.

Terminalia (Figs 77–79): The illustrated specimen agrees well with the *xanthopogon* holotype whose hypandrium is broken and has lost all major epandrial macrosetae. Long *ep* (epandrial lobes project beyond level attained by proctiger), lobes tapering distally to slightly downturned broadly-rounded apices bearing long strong macrosetae; *gcx* with two distal projections and a pair of macrosetae; *hyp*, in ventral view, slightly broader than long, tapering rapidly to mid-length before widening to form widely separated bilobed apex, lobes equipped with a number of macrosetae.

Variation: A fairly uniform species with a little variation in size.

Type material: ETHIOPIA: ♂ **holotype** (*macquartii* not seen) ‘Abyssinia’ ‘(Rüppel)’ (cited from Jaennicke, 1867) (SMFD). TANZANIA: 2♂ **syntypes** (*xanthopogon* seen), ‘Meru [03°14'S 36°45'E] / Nieder.’, ‘Ngare na / nyuki’, ‘Sjöstedt.’, ‘jan.’, ‘*Gonioscelis* / *xanthopogon* / P. Speiser det. / Type!’ (NHRS).

Type locality: Ethiopia: Hãrer.

Other material: ETHIOPIA: 1♂, ‘Ethiopia / Rock Valley / nr. Harar [Hãrer – 09°19'N 42°07'E] / vi-19-1965 / A.B. Gurney’ (NMNH); 1♂ 3♀, ‘Sammlung / F. Hermann’ [not on ♂], ‘Abyssinia / *Gonioscelis* / *ventralis* / var. / *vulpinus’* [on 1♀ only], ‘*Gonioscelis* / *ventralis* var. / *vulpinus* ♀ / det. E.O. Engel’ (ZSMC); 1♀, ‘Pres. by / Imp. Bur. Ent. / Brit. Mus. / 1924-298’, ‘Abyssinia / Nov. 1911 / R.J. Stordy’ (BMNH). KENYA: 2♂ 1♀, ‘van Someren / Mt-Moroto / Karamoja [farm 01°01'N 34°52'E] 4 50’, ‘Com. Inst. Ent. / Coll. No. 11740’ (BMNH); 1♂, ‘Kenya / 20km N Akeriamet / 01°42'N,35°38'E / 3-4 June 1980 / B. Lamoral’; 1♂, ‘Afrique or. Anglaise / Mt Kénya [00°10'S 37°20'E] vers^{t} ouest / zone inférieure / Alluaud & Jeannel’, ‘Prairies a Bosquets / Entre Riv. Narémuru / et Riv. Burgurett / Fév. 1912 – 2100m – St. 49’, ‘= *Stenopogon* / *macquardii* / Jaenn.’, ‘*Gonioscelis* / *ventralis* var. / *vulpinus* / det. E.O. Engel ♂’ (ZSMC)” 1♂, ‘Kenya: Machakos #83 / 40 km SE of Nairobi / 01°28'S 37°03'E 1700m / Date: 29.xi.1992 / A Whittington & J Londt / Lukenya cliffs/bushveld’; 1♂, ‘Brit. B. Africa, / Kabete [01°16'S 36°43'E], / 17.iv.1913 / T.J. Anderson’ (NMNH); 1♀, ‘Van Someren

/ Ngong Scarp [01°24'S 36°38'E] / May 1943' (NMNH); 1♂, 'Malindi [01°26'S 40°02'E], / 13.5.32 [poorly written]', 'Kenya Colony' (ID *G. flavipennis* sp. n. by Bromley 1947 – unpublished) (NMNH); 2♀, 'E. Africa: / Nairobi, [01°17'S 36°49'E] / Zone H, H25 3181, / L.C. Edwards. / B.M. 1952-403', '343 / 19.12.51 [1♀ indistinct]', '368 / 7.1.52 [1♀ indistinct]' (BMNH); 1♂ 1♀, 'Kenya #59 / Nguruma, Kajiado dist / 01°50'S 36°56'E 700m / iv.1990, Rift valley / Coll: I.M.I. Abu-Zinid / Alluvial plains'; 1♂, 'Kenya #58 / Nguruma, Kajiado dist / 01°50'S 36°56'E 700m / iii.1990, Rift valley / Coll: I.M.I. Abu-Zinid / Alluvial plains'; 1♀, 'Kenya #58 / Nguruma, Kajiado dist / 01°50'S 36°56'E 700m / i.1990, Rift valley / Coll: I.M.I. Abu-Zinid / Alluvial plains'; 9♂ 6♀, 'Kenya: Machakos #88 / 17 km SE Sultan Hamud / 02°04'S 37°28'E 1140m / Date: 30.xi.1992 / J Londt & A Whittington / Grassland & road verges'; 1♂, 'Brit. E. Africa, / Masai Reserve [approx. 02°30'S 37°00'E], / 17.4.1913 / T.J. Anderson', 'Kenya Colony' (NMNH); 1♂, 'Afr. Or. Angl. (Wa-Taïta) / Bura [03°30'S 38°18'E] / Alluaud & Jeannel / Mars 1912 – 1050^{m} – St. 61', '*G.* / *ventralis* / Schin. / det. Engel', '*Gonioscelis* ♂ / *ventralis* Schin' (ZSMC). SUDAN: 1♀, 'Brit. Mus. / 1922-194.', 'Sudan: Nuba Mountains, / Kadugli [= Käduqli 11°01'N 29°43'E] / Aug.-Sept. 1921. / Capt. F. Moysey.' (BMNH). TANZANIA: 3♂, 'Tanzania Mkomazi / Game Reserve. Near / Viteweni Ridge. / 03°55.09'S 37°49.63'E', '22-23 April 1996 / S. van Noort. Yellow pan / trap. Open *Combretum* / / *Dichrostachys* bushveld. / (burnt Nov 1995)', 'SAM –DIP- / A012156' (SAMC); 1♂, 'Tanzania Mkomazi / Game Reserve, between / Dindera Dam & Viteweni / Ridge. / 03°55.09'S 37°49.63'E', '16.iv.1996. S. van Noort / Sweep. Open disturbed / *Combretum* bushland. / burnt Nov 1995'' 'SAM –DIP- / A012155' (SAMC); 1♀, 'Tanzania: Mkomazi / Game Reserve. Ibaya / Camp. 3°58'S 37°48'E' / 880m A Russell-Smith / Malaise trap 29.i.1996'; 2♀, 'Meru / Nieder.', 'Ngare na / nyuki', 'Sjöstedt.', 'jan.', '*Gonioscelis* / *phacopterus* / P. Speiser det.' (NHRS) [recorded by Speiser (1910) as *phacopterus* but clearly belonging to *xanthopogon*. Sexual dimorphism partly accounts for Speiser's error]; 1♂, 'Tanzania: 1mi. NW. / of Chunya [08°32'S 33°25'E] 5000' / 29.i.1970 / M.E. Irwin & / E.S. Ross' (CASC); 1♂ 1?, 'Tanzania / 19 / Ex. Coll. W.H. Potts. / B.M. 1967-472.' (BMNH). UGANDA: 1♂, 'van Someren / Entebbe [00°04'N 32°28'E] Forests / Kitinda. Uganda, / July 1951', 'Com. Inst. Ent. / Coll. No. 12301' (BMNH); 1♂, 'Uganda / Nabilatuk [02°03'N 34°34'E] / 7.viii.1958 / J. Bowden' (BMNH); 1♀, 'Asilid + / prey [pinned with Ichneumonidae]', 'Uganda / Madi [03°15'N 31°45'E] / -v-1927. / G.D.H. Carpenter', 'Pres. by / Imp. Inst. Ent. / Brit. Mus. / 1931-331.' (BMNH); 6♀, '19-25, Sep. 1911. / S.A. Neave', 'Uganda Prot. / W. shores of / Vic. Nyanza. / Buddu [00°25'S 31°40'E] 3,700 ft.', '1912-193.' (BMNH). ZIMBABWE: 1♂, 'Pres. by / Imp. Bur. Ent. / Brit. Mus. / 1924-298.', 'Matopos [Hills 20°35'S 28°40'E] / S. Rhodesia / 11.3.1923 / Rhodesia / Museum.' (BMNH). UNKNOWN: 2♂ 1♀, 'Olgasalic / May. 1944 / Meneghetti.', 'Pres. by / Coryndon Mus. / B.M. 1961-696.' (BMNH); 1♂, 'Afrique / Dalla Adou [? Ethiopia Dalladu 09°23'N 40°50'E] / 28 Juillet' (MNHN).

Notes: Jaennicke's holotype is in very poor condition. Mr F. Geller-Grimm (Wiesbaden, Germany) sent me the following note regarding the condition of the specimen: 'Sex can not be checked. Condition: The specimen is destroyed by feeding beetles. The following parts are preserved: thorax part, front right leg, front left leg, mid left leg, wings, and the first 4 tergites.' As the specimen is fragile and the genitalia missing, it was decided not to consign it via the postal services. The original description is good, and I have seen other material from Hãrer (the gazeteer spelling of Harar or Harrar) that strongly suggests that the synonymy of *xanthopogon* is justified. Engel (1925) listed the Ethiopian material in ZSMC as follows '3♀♀, 1♂ aus Abyssinien, Harrar, in Coll. Hermann.' Only one of the specimens actually carries the word 'Abyssinia' on a label and none has the word 'Harrar'. As it is possible that Engel had been told that the material had come from Hãrer, and as I have seen a more recently collected specimen labeled 'Harar', I accept that this was indeed the place from which Engel's material originated. Engel (1925) considered *macquartii* to be a variety of *ventralis*. There is no evidence to justify that ranking.

Distribution, phenology and biology (Tables 1–2, Fig. 144): Known from the north-east African countries of Tanzania, Kenya and Ethiopia. The species distribution straddles the equator and specimens have been collected in January, March, April, May, June and November. The habitat is open woodland (savanna). There is one Natal Museum prey record as follows: 1♂ (17 km SE Sultan Hamud) – Diptera (Asilidae, *Euscelidia* sp.).

Similar species: A member of the large and widely distributed group of species possessing a poorly defined facial gibbosity. The species is distinctive and yet similar to *pruinosus* which has been found sympatrically. Males can be separated using genital morphology, but females are difficult to identify without associated males.

Gonioscelis maculiventris Bigot, 1879

Figs 80–82, 148

Gonioscelis maculiventris Bigot, 1879: 441–442; Hull 1962: 131–132 (Figs 1778 & 1782 ♂ gen.).

Redescription: Based primarily on holotype ♂ (OXUM).

Head: Antennal scape and pedicel orange, postpedicel and style dark brown. Facial swelling pronounced, mystax brown-yellow, few small yellow-brown setae between antennal sockets and gibbosity. Frons and vertex gold pruinose. Ocellar tubercle apruinose with strong black *oc*. Occiput mostly gold pruinose (silver behind eye margins), setae yellow. Proboscis and palpus dark brown with black setae.

Thorax: Dark red-brown, gold pruinose. Postpronotal lobes orange, clearly contrasting with adjacent mesonotum, with approx. 4 black macrosetae and smaller yellow setae. Mesonotal setae black: *ac*, few strong ones anteriorly; approx. 20 pairs *dc*, well developed, clearly extending along entire length of mesonotum; 3 *npl*; approx. 5 *sa*; 6–7 long *pa*. Scutellum dark red-brown with approx. 6 black *mrg sct*. Wing length 8.3 mm, membrane mostly brown-yellow. Legs orange except for small dark red-brown area on posterior face of prothoracic femur, all macrosetae mostly black (few yellow dorsally on metathoracic femur), fine setae yellow. Prothoracic coxa black, thinly gold pruinose, black setose; femoral spur moderately pointed (angle approx. 35°).

Abdomen: Tergites mostly dark red-brown to black, posterolaterally orange, mostly silvery pruinose (with apruinose areas), setae yellow, long laterally on T1–3. Sternites dull brown-yellow, mostly apruinose, setae long yellow.

Terminalia (Figs 80–82): Moderately short *ep* (proctiger projecting slightly beyond epandrial lobes), lobes hardly tapering distally, equipped with fine setae; *gcx* with three distal projections and a few fine setae; *hyp*, in ventral view, much shorter than broad, tapering rapidly to a shallowly-bilobed apex, each lobe equipped with long, fine setae.

Variation: A fairly variable species in both size and coloration. Specimens from the Richtersveld are generally smaller than those from elsewhere (perhaps because it is generally drier in this region). Leg coloration may also vary considerably from orange to dark red-brown. Male genital morphology on the other hand appears quite constant.

Type material: SOUTH AFRICA: 1♂ **holotype** (seen). No provenance data on specimen, but cited erroneously as 'Natal' by Bigot (1879) (OXUM).

Type locality: It is not known exactly where the holotype was collected, but as it is probable that it was not far from Cape Town and somewhere along the west coast, I here designate the type-locality as South Africa, Western Cape, 5 km E Lambert's Bay, as a good series of similar specimens was collected in this area.

Other material: NAMIBIA: 1♀, 'Halenberg S. [Haalenberg Siding 26°38'S 15°29'E] / Namib, 5-xii- / 48. Koch/Son'; 3♂ 7♀, 'Namibia 10km W Aus / 2616CA 30.viii.1983 / Londt & Stuckenberg / Sparse grassveld - / Small woody plants'; 1♂, 'Namibia / 10km west of Aus / 26.39S 16.09E / 7.ix.2002 / F.W. and S.K. Gess' (AMGS); 1♂ 1♀, 'Namibia / Klinghardtberge / 27.14S 15.43E / 2.ix.2002 / F.W. and S.K. Gess' (AMGS); 1♀, 'Namibia / Klinghardtberge / 27.14S 15.43E / 3.ix.2002 / F.W. and S.K. Gess' (AMGS); 1♂ 1♀, 'SWA / Klingharts- / berge [27°20'S 15°45'E] / 3.iv.1980 / Whitehead' (SAMC); 1♀, 'SWAfr/Namibia / Klinghardt / VB Whitehead / 1.x.1982' (SAMC); 1♀, 'SWAfr/Namibia / Klinghardt / VB Whitehead / 24.x.1982' (SAMC); 2♀, 'Namibia, Chamnaub / 27.43S 16.05E / 28.vii.2002 / F.W. and S.K. Gess' [1♀ with prey: Diptera: Tabanidae] (AMGS); 6♂ 10♀ 2?, 'Namuskluft 88 / SE 2716 Dd / 7-14 Oct. 1970', 'H11127' (NMNW); 2♂ 6♀, 'Namuskluft 88 / SE 2716 Dd / 7-15 Oct. 1970', 'H11127' (NMNW); 2♂ 3♀, 'Namuskluft 88 / Lüderitz / SE 2716 Dd / 20-22 Sept 1973', 'H14597' (NMNW); 2♀, 'Namuskluft 88 / Lüderitz / SE 2716 Dd / 12-15 Sept 1973', 'H14192' (NMNW). SOUTH AFRICA: 4♂ 7♀, 'STH AFRICA: N Cape / 5 km NE of Grootderm / 28°29'52"S:16°39'25"E / 27.viii.2002 JGH Londt / 90m Sandy & rocky / ridge with succulents'; 6♂ 8♀, 'Sth Africa Cape Prov / Richtersveld 2816DA / 1km E. of Grootderm / 2.ix.1983 J Londt & / B Stuckenberg Foot / of small hill'; 9♂ 12♀, 'Sth Africa Cape Prov / Richtersveld 5 km NE / Grootderm 1.ix.1989 / 28°31'00"S:16°38'00"E / J Londt B Stuckenberg / P Croeser 50 m Sandy / slope Euphorbia scrub'; 1♂, 'Sth Africa Cape Prov / Richtersveld 1 km N / Kuboes 1.ix.1989 200m / 28°25'30"S:16°59'30"E / J Londt B Stuckenberg / & P Croeser Rocky E / slope Euphorbia scrub';1♂ 3♀, 'Sth Africa Cape Prov / Richtersveld 2816BD / 40km S of Ochta Mine / Londt & Stuckenberg / 2.ix.1983 / Mixed Karoo / bush with few flowers'; 4♂ 2♀, 'Sth Africa Cape Prov / Richtersveld 50 km NE / Grootderm 3.ix.1989 / 28°19'00"S:16°55'00"E / J Londt B Stuckenberg / Sandy valley below a / rocky hillside 350 m';1♂, 'S Afr C.P. / Skouer- / fontein / 2817Cc / 6 x 80 / Whitehead' (SAMC); 1♀, '16 mi E of / Port Nolloth [29°15'S 16°52'E] / Aug 1921 / O. Hughes'; 1♂ 1♀, 'South Africa. Port / Nolloth. Sea level / 23-ix-1967 / E.S. Ross & / A.R. Stephen' (CASC); 4♂ 4♀, 'Sth Africa: Cape Prov / Richtersveld 18 km S / Lekkersing 2.ix.1989 / 29°07'00"S:17°08'00"E / J Londt B Stuckenberg / & P Croeser 200m / Arid scrub/ succulents'; 2♂ 4♀, 'South Africa: Cape / Steinkopf / Anenous [29°14'S 17°35'E] Flats / 14-ix-1992 J. Manning'; 1♂ 6♀, 'R.S.A. : N Cape #88 / 27km E Port Nolloth / 29°18'S 17°09'E 180m / Date: 26.viii.1995 / Coll: J. & A. Londt / Open red sand/Flowers'; 1♀, 'R.S.A. : N Cape #85 / 5km N Komaggas / 29°45'S 17°31'E 390 m / Date: 24.viii.1995

/ Coll: J. & A. Londt / Rocky slope Macchia'; 1♀, 'Sth Africa Cape Prov / 78 km S of Springbok / 30°01'30"S:17°52'30"E / 31.viii.1989 700 m / B Stuckenberg J Londt / P Croeser Sandy area / 4km S Bufelsrivier'; 2♂ 2♀, 'Sth Africa Cape Prov. / 12km W Soutfontein. / 3017DA 4.ix.1981 / J. Londt, L. Schoeman / and B. Stuckenberg. / Succulent Karoo'; 1♀, 'Sth Africa: Cape Prov / 8 km E of Kamieskroon / 3018AA 5.ix.1983 / Londt & Stuckenberg / Montane old land with / rocks & bushes nearby'; 1♂, 'Sth Africa Cape Prov. / 45km N Vanrhynsdorp. / 3118BA 4.ix.1981 / J. Londt, L. Schoeman / and B. Stuckenberg. / Succulent Karoo'; 1♀, 'R.S.A. : W Cape #97 / 17km N Vanrhynsdorp / 31°28'S 18°42'E 210 m / Date: 28.viii.1995 / Coll: J. & A. Londt / Rocky hillside'; 3♀, 'R.S.A.: W Cape #100 / 8km E of Lutzville / 31°36'S 18°24'E 60m / Date: 29.viii.1995 / Coll: J. & A. Londt / Sandy slope Flowers'; 1♂, 'Sth Africa Cape Prov. / 10km N Vanrhynsdorp / 3118DA 2.ix.1981 / J. Londt, L. Schoeman / and B. Stuckenberg. / Succulent Karoo'; 2♀, 'v Rhynsdorp [= Vanrhynsdorp 31°37'S 18°44'E] / July-Aug. '27 / G. v. Son'; 2♀, 'v Rhynsdorp / viii-1927 / Dr Brauns'; 2♀, 'R.S.A. : W Cape #89 / 23km S Vanrhynsdorp / 31°47'S 18°46'E 510m / Date: 28.viii.1995 / Coll: J. & A. Londt / Gifberg Pass summit'; 1♀, 'Sth Africa: Cape Prov / Gifberg 23km SE Van / Rhynsdorp 3118DC / Date: 15 Sept. 1982 / Coll: L. E. Schoeman'; 1♀, 'Klaver [31°47'S 18°37'E] C.C. / 19.9.1917 / A. Roberts'; 5♂ 3♀, 'Sth Africa Cape Prov. / Outskirts of Klawer / 3118DC 2.ix.1981 / J. Londt, L. Schoeman / and B. Stuckenberg. / Succulent Karoo'; 3♂ 4♀, 'Sth Africa Cape Prov / 5km N Nieuwoudtville / 3119AC 5.ix.1981 / J. Londt, L. Schoeman / and B. Stuckenberg. / W. Mountain Karoo'; 1♂, 'Sth Africa Cape Prov / 25k E Nieuwoudtville / 3119AD 5.ix.1981 / J. Londt, L. Schoeman / and B. Stuckenberg. / W. Mountain Karoo'; 2♂, 'South Africa, Cape Prov. / Botterkloof Pass, top of / Sept. 13, 1972, 3119Cd / 2230ft ME&BJ. Irwin / white sand dune assoc.'; 10♂ 10♀, 'Sth Africa Cape Prov / 5km [East of] Lambert's Bay / 3218AB 31.viii.1981 / J. Londt, L. Schoeman / and B. Stuckenberg. / Westcoast Strandveld'; 1♂ 1♀, 'Graafwater [32°09'S 18°36'E] / C.P.' ~ 'Mus. Exp. / Oct., 1947' (SAMC); 1♂, 'S Afr C.P. / Lamberts Bay / Rd N. Elands Bay / 26.ix.1978 / VB Whitehead' (SAMC); 7♂ 1♀, 'South Africa: Cape / Prov.; Agtertuin Farm / 55 km E Clanwilliam [32°11'S 18°54'E] / 10-iv-1984 / M. E. Irwin / sandy area' [carry INHS Insect Collection numbers 33,288; 34,082; 34,083; 34,087; 34,088; 34,089; 34,090; 34,091] (INHS); 1♂, 'South Africa / Clenwilliam [= Clanwilliam 32°11'S 18°54'E] / 28 Sept. 1936 / Ac. US'; 1♂, 'S Afr 20 km / N. Clanwilliam / 9 ix 82 (1230 – 130) / G humifusum / VB Whitehead' (SAMC); 1♀, 'Cape Province / Paleisheuval [32°28'S 18°43'E] / Hetkruis / 26.ix.1985 / F.W. & S.K. Gess' (AMGS); 3♀, 'South Africa: W. Cape / 32km ne. Clanwilliam / Brandewyn R. 3219AA / 2-3.x.1977 RM Miller'; 7♂ 8♀, 'Sth Africa: Cape Prov / Biedou Valley 300m / 32°06'00"S:19°19°00"E / J Londt B Stuckenberg / & P Croeser 6.ix.1989 / Rocky gentle N Slope / Scrub & wild flowers'; 1♀, 'South Africa: Cape / Prov. Biedouw valley / Clanwilliam District / 32°06'S 19°19'E / 22.viii.1987 M. Picker'; 24♂ 44♀, 'S. Africa: SW Cap #102 / Biedouw Valley / 32°06'S 19°14'E 350m / 1-12.ii.1991, M. Picker / Succulent Karoo'; 1♂, 'S Afr C.P. / Bidouw Valley / 3219AB / VB Whitehead / 4 ix 1983' (SAMC); 1♂, 'S Afr C.P. / Bidouw Valley / 3219AB / VB Whitehead / 8 ix 1983' (SAMC); 1♂ 6♀, 'Biedouw Valley / Namaqualand / 24/9/89 / M Picker/B Leon'; 1♂ 2♀, 'East of / Pakhuis Pass [32°09'S 19°02'E] / C.P.' ~ 'Mus. Exp. / Sept., 1947' (SAMC); 3♂ 12♀, 'Saldanha Bay [33°05'S 18°00'E]' ~ 'S.A/M. / 9: 90' (SAMC); 4♂ 4♀, 'Hopefield [33°04'S 18°21'E]' ~ 'S.A.M. / 9: 60' (SAMC); 1♂, 'South Africa / Stellenbosch [33°56'S 18°51'E] / 23-10-1930 / Ac. US'; 1♀, 'Sth Africa Cape Prov. / 3km S Tulbagh / 3319AC 30.viii.1981 / J. Londt, L. Schoeman / and B. Stuckenberg. / Macchia & old lands'; 3♀, 'S Africa: Cape #59 / 14 km S of Wolseley / 33°32'S 19°11'E 300m / Date: 31.x.1991 / Coll: J.G.H. Londt / Bain's Kl. Sandy area'; 4♂ 6♀, 'Pearly Beach [34°40'S 19°30'E] / Bredasdorp' ~ 'S.A.M. / 12: 58' (SAMC); 3♂ 2♀, 'South Afriaca, Cape P. / Brandfontein Reserve / 34°46'S 19°52'E / 16-18 October 1992 / HG Robertson' (SAMC).

Recorded material not studied: Engel (1929) records under *maculipennis* '♀, Saw Mills, S. Rhodesia; 27.xii.23; Rhodesia Mus.; Imperial Bureau of Entom.' I have not seen this specimen and consider the identification to be incorrect.

Distribution, phenology and biology (Tables 1–2, Fig. 148): Distributed along the west coast of southern Africa between southern Namibia in the north and the Stellenbosch area of the Western Cape province of South Africa in the south. This entire region receives winter rainfall and the majority of known localities fall within the Succulent Karoo biome. Although most specimens were collected between August and October (the rainy season) records are available for July, December, February and April suggesting a far longer period of adult activity. The December record and one of the April records are of specimens collected in southern Namibia, where limited winter and summer rainfall occurs. The February, and another April record pertain to material collected in the dry, rain-shadow area east of Clanwilliam, that may also receive a little summer rain. The species is commonly found, often abundantly, resting on the ground or low vegetation; it preys mostly on flower-visiting ruteline beetles. In contrast, a male from Biedouw is pinned beneath a female *Neolophonotus bimaculatus* Londt, 1986 that had been feeding on it. There are 25 Natal Museum prey records as follows: 2♂ 23♀ (14 km S Wolseley 1; 17 km N Vanrhynsdorp 1; 45 km N Vanrhynsdorp 1; 5 km N Komaggas 1; 5 km NE Grootderm 1; 5 km W Lamberts Bay 1; 8 km E Kamieskroon 1; Biedouw Valley 15; Outskirts of Klawer 1; Richtersveld 1; Steinkopf 1) – Coleoptera (Buprestidae 1; Scarabaeidae 21), Diptera (Asilidae 1, *Neolophonotus* sp.), Hymenoptera (Apidae 1; Coletidae 1). In addition there is a prey record from Namibia in AMGS listed in the material above.

Similar species: A distinctive species, easily identified by its dark, bristly appearance and characteristically bilobed hypandrium. Although the face is gibbose, it is not closely related to either of the two major groups possessing this feature (i.e. the *hispidus* 'group', with single medial hypandrial process, and the *punctipennis* 'group' of smallish species with spotted wings).

Gonioscelis mantis (Loew, 1852)

Figs 83–85, 146

Stenopogon mantis Loew, 1852: 659; Loew 1862: 8.
Gonioscelis mantis: Engel 1925: 168–169; Oldroyd 1974: 41 (Fig. 31 fore-leg).
Gonioscelis calopus Bigot, 1879: 441; Ricardo 1925: 266 (Syn. of Engel 1925).

Redescription: Based primarily on holotype ♀ (ZMHB).

Head: Antenna (both broken off beyond pedicels) with scape and pedicel dark red-brown to black (postpedicel in other material similarly coloured), setae dark red-brown ventrally, pale yellow dorsally. Facial swelling poorly developed, mystax pale yellow, covering entire face although somewhat weaker in dorsal half. Frons and vertex thinly gold pruinose. Ocellar tubercle apruinose with dark red-brown *oc*. Occiput gold-silver pruinose, two weakly pruinose small spots behind vertex, setae pale yellow. Proboscis and palpus dark red-brown, proboscis with pale yellow-white setae, palpus pale-brown setose.

Thorax: Dark red-brown to black, gold pruinose. Postpronotal lobes not clearly contrasting with adjacent mesonotum, with long weak pale yellow setae. Mesonotal setae mostly yellow: *ac* not evident; approx. 3–4 pairs dark red-brown *dc*, a few extending anterior of transverse suture; 2 pale yellow *npl*; 2 yellow *sa*; 3 yellow *pa*. Scutellum dark red-brown to black, gold pruinose, with approx. 4 (broken and difficult to see) yellow *mrg sct*. Wing length 8.1 mm, membrane uniform yellowish. Legs: Tibiae and tarsi orange-brown, darker distally, prothoracic femur dark red-brown to black, distal parts orange, macrosetae black on dark red-brown parts, yellow on orange sections, mesothoracic femur similar to prothoracic but all setae yellow, metathoracic femur entirely dark red-brown to black with yellow setae. Prothoracic coxa black, gold-silver pruinose, white setose; femoral spur moderately pointed (angle approx. 40°).

Abdomen: Tergites mostly dark red-brown to black (posterior margins somewhat orange-brown), mostly gold-silver pruinose, setae yellow. Sternites dark red-brown to black, weakly silver pruinose, setae yellow.

Terminalia (Figs 83–85): Long *ep* (epandrial lobes projecting beyond proctiger), lobes tapering and slightly downturned distally, tips equipped with fine setae; *gcx* with two distal projections and a few fine setae, ventral projections are broad horizontally orientated flanges (best seen in caudal view); *hyp*, in ventral view, clearly broader than long, slightly constricted at mid-length and bilobed distally, lobes slightly divergent and equipped with fine setae.

Variation: A fairly uniform species. The holotype female has much darker prothoracic femora than all the other specimens studied, which have largely orange femora with a variable-sized dark red-brown posterodorsal marking. The holotype's femoral spur is more acute than in other material measured (approx. 60–70°). Until more topotypical material is available there must be uncertainty concerning the association between the type and all other material listed below. Some variation in male genital morphology is evident, this being noticeable in slight variations seen in shape and size of hypandrial lobes.

Type material: MOZAMBIQUE: 1♀ **holotype** (*mantis* seen), 'Mozambique / Tette [Tete – 16°10'S 33°36'E] / Peters S.', '465', '*Gonioscelis* / *mantis* / Type (Loew *)', '*Gonioscelis* / *mantis* / Type (Loew) / Dr. Enderlein det. 19', 'Holotypus' 'Zool. Mus. / Berlin' (ZMHB). SOUTH AFRICA: 1♀ **holotype** (*calopus* seen), no provenance data [but cited as 'Natal' by Bigot (1879)] (OXUM).

Type locality: Here designated as Mozambique: Tete.

Other material: MOZAMBIQUE: 1♂, 'Mozambique / Belavista [26°20'S 32°40'E] / 30/3/1980 / Coll. H.R. Feijen'. SOUTH AFRICA: 4♂ 3♀, 'South Africa 2327DB / Transvaal Ellisras / 30.i.1978 JGH Londt / Grass near trees on / Makolo River banks'; 1♂ 1♀, 'Woodb. Vill. [i.e. Woodbush Village. Woodbush Forest Reserve – 23°47'S 30°04'E] / iv.1915 / C. J. Swierstra'; 1♀, 'Boekenhoutskloof [24°27'S

28°10'E] / South Africa / (30km NE Pretoria) / 5.iv.1977 / G. Bernon 5'; 1♀, 'Boekenhoutskloof / South Africa / (30km NE Pretoria) / 17.ii.1977 / G. Bernon 1'; 1♂, 'Nylstroom [Modimolle - 24°42'S 28°24'E] / 16/31/12/21 / G.P.F.v.Dam'; 1♀, 'Pretoria [25°45'S 28°10'E] / 7.xi.1931 / A. Roberts'; 5♂ 5♀, 'De la Rey [Delareyville – 26°42'S 25°28'E] / W. Transvaal / Dr Brauns / 1. 1917'; 1♂, 'De la Rey / W Transvaal / Dr. Brauns / i. 1917', 'Sammlung / E. Engel', '*Gonioscelis / mantis* / ♂ Loew' (ZSMC); 1♀, 'I 1919 / Dr. Brauns. / De la Rey / W Transvaal', 'Engel / 4', 'Sammlung / E. Engel', '*Gonioscelis / mantis* Lw. ♀ / det. E.O. Engel' (ZSMC); 1♂, 'De la Rey / W. Transvaal / Dr Brauns / Jan. 1919' (SAMC); 2♀ same data but '1 1917' (SAMC); 2♂, 'Lichtenburg [26°09'S 26°11'E] / Transvaal / Dr. Brauns', 'Sammlung / F. Hermann', '*Goniosc. / calopus* / Bigot', '*Gonioscelis / mantis* Lw. / det. E.O. Engel ♂' (ZSMC); 1♀, 'Lichtenburg / Transvaal / Dr. Brauns', 'Sammlung / F. Hermann', '*Gonioscelis / ventralis* ♀ / Schin / det. E.O. Engel ♂' (ZSMC); 1♀, 'Potchfstm [Potchefstroom 26°43'S 27°06'E] / T Ayres [not April as cited by Engel]', '*G. / mantis* / Lw. / det Engel', '*Gonioscelis / mantis* Lw. ♀ / det. E.O. Engel' (ZSMC); 1♀, 'Potchfstm / T Ayres [blurred – probably as above]', '*Gonioscelis / ventralis* / Schin. / det Engel', '*Gonioscelis / ventralis* Schin. / det. E.O. Engel ♀' (ZSMC); 1♂, 'Natal / Zululand / Kosi Bay [26°53'S 32°55'E] / I. Bampton / 19 Sept. 1972'; 3♀, 'South Africa: Natal / Ndumu Game Reserve / Rest Camp 2632Cd 95m / 15 Feb 1978 Malaise / Brothers & Bampton'; 1♀, 'South Africa, Natal / Zululand, Ndumu Game / Reserve, 26-x-1972 / ME Irwin, 2632Cc'; 6♂ 7♀, 'S Africa: N Cape #8 / 8km N Schweizer-Reneke / 27 09'S 25 15'E 1350m / Date: 12.iii.1991 / Whittington & Londt / Acacia thicket'; 1♀, 'Schweizer- / Renecke [Schweizer-Reneke – 27°11'S 25°20'E] / 29.3.69 / A. Strydom'; 5♂ 6♀, 'S Africa: NW Province / S.A. Lombard Nature Reserve / 27°35'08"S:25°30'41"E / 1260m 11.iii.2003 J Londt / *Rhus*, *Maytenus* savanna'; 4♂ 4♀, 'S Africa: NW Province / S.A. Lombard Nature Reserve / 27°36'02"S:25°28'39"E / 1230m 12.iii.2003 J Londt / Mixed woodland savanna'; 1♂, 'S Africa: N Cape #7 / S A Lombard Nat. Res. / 27 37'S 25 29'E 1250m / Date: 12.iii.1991 / Londt & Whittington / Sand, Acacia thornveld'; 1♂ 'S Africa: NW Province / Bloemhof Dam (reserve) / 27°38'05"S:25°40'13"E / 1230m 12.iii.2003 J Londt / *Acacia*, *Ziziphus* savanna'; 1♂, 'S Africa, O.F.S. / Sandveld Nature Reserve / Hoopstad / SE2725Da', '8-12 Feb 1982 / Entomology Dept', 'National Museum / Bloemfontein / Dept. Entomology'; 1♂, 'Bothaville [27°22'S 26°37'E] / Orange Fr St / Dr. Brauns / 25 11 [18]98', '*Gonioscelis / calopus* / Bigot', '*mantis* Lw. / (= *calopus* Big.)' (ZSMC); 1♀, 'Bothaville / Orange Fr. St. / Dr. Brauns / 20 2 [18]99', '*G. / mantis* Lw. / det. Engel' (ZSMC); 3♀, O. Free State / Bothaville / 30-xii-1964 / D.J. Brothers' (AMGS); 1♀, 'Kroonstad, [27°40'S 27°14'E] O.R.C. [Orange River Colony] / E. Eckersley. / 1904-90.' (BMNH); 1♀, O. Free State / Chicago Lindley [27°52':27°55'E] / 2-i-1965 / D.J. Brothers' (AMGS); 1♂ 1♀, 'South Africa, Natal Prov / Zululand, 20mi. S. Ndumu / Game Res. Camp (2732Aa) / Nov. 29, 1971; ME & BJ Irwin / dry scrub forest; 320ft'; 1♀, 'South Africa: Natal / 5km E Makana – near / Ndumu Game Reserve / 2732AB 3.xii.1982 / Londt, Stuckenberg & / Barraclough Roadside'; 1♂, 'South Africa: Natal; / False Bay Park Res. / ca 27°58'S 32°22'E / Sand Forest J Londt / 30.i.-1.ii.1988 40m / Mpophomeni Trail area'; 1♂, 'S Africa, O.F.S. / Voorspoed 1585 / Boshof / SE2825Cd', '21-28 Mar

1977 / A. Strydom'; 1♂, 'S Africa: OFS #35 / 42km SW of Winburg / 28 45'S 26 45'E 1500m / Date: 20.iii.1991 / Londt & Whittington / Grassland and bushes'; 1♂, 'South Africa / Senekal [28°19'S 27°36'E] / Feb. 1940'; 1♀, 'South Africa / Senekal / Nov. 1941 / Ac.US.'; 2♂ 1♀, 'Orange F. State. / Harrismith. [28°17'S 29°08'E] / March 1-20.1927.', 'S. Africa. / R.E. Turner. / Brit. Mus. / 1927-147.' (BMNH); 1♀, 'South Africa OFS / 46km W. Bloemfontein / 2925BB 26.iii.1982 / J. Londt & L. Schoeman / Gentle slope with / rocks shrubs & grass'; 1♂, 'Bloemfontein, [29°08'S 26°10'E] / S. Africa. / Maj. E. Eckersley. / 1904.189' [recorded Ricardo (1925)] (BMNH); 2♀, 'South Africa OFS / 20km W. Bloemfontein / 2926AA 26.iii.1982 / J. Londt & L. Schoeman / Open grass & sand'; 1♀, 'S. Africa: OFS #4 / 15km NE of Ladybrand / 2927Ab 28.xii.1982 / Modderpoortspruit / P. Stabbins & R. Miller'; 1♂ 1♀, 'Natal / Estcourt [29°00'S 29°53'E]' ~ 'A.E. Haviland / 189 [cut off, probably 1894, see under *longulus*]', '*G. mantis* / Lw / det. Engel', '*Gonioscelis* / *mantis* Loew' (ZSMC); 1♂ 1?, 'Type by the / description of / the male by / the author.', 'Pres. by / Govt. Mus. Natal. / 1911-45', 'S. Africa: / Natal / Estcourt / 1896' [recorded Ricardo (1925)] (BMNH); 4♂ 5♀, 'Estcourt, / Natal. / Sept. & Oct. 1896. / G.A.K. Marshall. / 1903-17.', 'v. close to St. mantis, Lw. / (Peters Reise nach Mozambique p.8), / but differs in legs being yellow in- / stead of black. – E.E.A. 28.x.02.' [1♀ only with this label] (BMNH); 1♀, 'Malvern, [29°53'S 30°55'E] / Natal. / Mar. 1897, / G.A.K. Marshall. / 1903-17.', 'Malvern / Natal 3.97' (BMNH); 3♂ 2♀, 'Smithfield [30°13'S 26°32'E] / O.R.C. [Orange River Colony] / Kannemeyer', 'Sammlung / F. Hermann', '*Gonioscelis* / *calopus* / Bigot', '*Gonioscelus* / *mantis* Lw. / det. E.O. Engel ♂' (ZSMC); 1♂ 1♀, 'Smithfield / O/R/C. / Kannemeyer' ~ 'orangia / 1910' (SAMC); 1♀, 'Smithfield / O.R.C. / Kannemeyer' ~ 'orangia / 1910', '*Goniosc.* / *calopus* / Bigot', 'Pres. by / Imp. Inst. Ent. / Brit. Mus. / 1931-331.', '*Gonioscelis* / *calopus* / Bigot', '*Gonioscelus* / *mantis* / Lw. / Dr E O. Engel det.', 'Sammlung / F. Hermann' (BMNH); 1♂, 'South Africa; O.F.S. / 8mi. N of Aliwal North / March 9, 1972, 1260m / ME & BJ Irwin, 3026Db'; 1♂ 1♀, 'Aliwal North, [30°42'S 26°42'E] / Cape Province. / 4350 ft. / 1-13.i.1923.', 'S. Africa. / R.E. Turner. / Brit. Mus. / 1923-70.'[1♀ lacks this label] (BMNH); 2♀, 'Aliwal North, / Cape Province. / Dec. 1922', 'S. Africa. / R.E. Turner. / Brit. Mus. / 1923-45' (BMNH).

Recorded material not studied: SOUTH AFRICA: 1♂ (1.1917) 1♀ (1.1919), Delarey, W. Transvaal, Dr Brauns (Engel Coll.). Oldroyd (1980) states that *mantis* has also been recorded from Lesotho, South Africa, and Zimbabwe. Most if not all the localities mentioned are likely to be within the range of *mantis*, so for the present these records are accepted.

Notes: Loew (1852) gives little information about the type apart from saying that it was from 'Mossambique'. Engel (1925) records 1♀ *mantis* from 'Mozambique, Tette, Peters' (ZMHB) and this is the specimen currently considered to be the holotype. Engel (1925) synomymised *calopus* with *mantis*, but this appears to have been overlooked by subsequent authors. As the *calopus* type is a female without a locality label (but stated as being from 'Natal' by Bigot (1879)) it cannot be with certainty assigned to *mantis* – however, the type agrees with females of what is here considered to be *mantis*, and so I support the synonymy suggested by Engel (1925) in the interests of taxonomic stability.

The problem is exacerbated by the fact that the *mantis* type is also a female, and the need for male specimens from the type-locality still exists. The males Engel identified as *mantis* are here accepted as correctly associated, even though the type does have much darker prothoracic femora (see above).

Distribution, phenology and biology (Tables 1–2, Fig. 146): Distributed widely throughout the north-eastern parts of South Africa, an area dominated by the Grassland biome, and to a lesser extent the adjacent Savanna biome. The type locality is somewhat removed from the area where all the other studied material has been found. This suggests that the holotype could belong to a separate species, but as much of southern Mozambique is poorly sampled this issue will have to receive further attention at a later date. Adults have been collected throughout the warmer months of the year (September through to April) in this area of summer rainfall. Commonly found in low open vegetation (usually grass), often where trees are present. There are two Natal Museum prey records as follows: 1♂ 1♀ (42 km SW Winburg 1; Ndumu Game Reserve 1) – Coleoptera (probably Chrysomelidae 1), Hymenoptera (Formicidae 1).

Similar species: A member of the large and widely distributed group of species possessing a poorly defined facial gibbosity. The species is probably related to other southern African species possessing a rather short, distally bilobed hypandrium, but is otherwise reasonably distinctive. A particularly useful distinguishing feature is the arrangement of gonocoxal processes. In caudal view the ventrally situated processes lie more or less horizontally rather than having the more usual vertical orientation.

Gonioscelis melas sp. n.

Figs 9–10, 86–88, 150

Etymology: Gr. *melas* – black. The name referring to the uniformly black colour of the species.

Description: Based primarily on holotype ♂ (NMSA).

Head: Antenna black, setae black. Facial swelling pronounced, mystax uniform black, a few weakly developed setae between gibbosity and antennal sockets. Frons and vertex thinly gold pruinose. Ocellar tubercle silver pruinose with black *oc*. Occiput silver pruinose except behind vertex, setae black. Proboscis and palpus black, black setose.

Thorax: Black, thinly gold pruinose. Postpronotal lobes dark red-brown, contrasting to some extent with adjacent mesonotum, black setose. Mesonotal setae black: *ac* weak, not clearly differentiated; approx. 12 pairs *dc*, clearly extending anterior of transverse suture; 3 *npl*; 4–5 *sa*; 3 *pa*. Scutellum black, gold-silver pruinose, with 4 black *mrg sct*. Wing length 6 mm, membrane mostly dark red-brown (Fig. 9). Legs: Dark red-brown to black, femora appearing darker than rest, all setae of femora black, other segments with black and white setae (white mainly on tibiae). Prothoracic coxa black, silver pruinose, black setose; femoral spur (Fig. 10) difficult to measure but very sharply pointed (angle approx. 10°).

Abdomen: Tergites black, apruinose except for silver posterior margins, setae black. Sternites black, apruinose except for small patch of silver pruinescence medially on hind margins, setae black.

Terminalia (Figs 86–88): Proctiger projecting very slightly beyond epandrial lobes, lobes hardly tapering and equipped with fine setae; *gcx* with four distal projections and a few long fine setae; *hyp*, in ventral view, slightly broader than long, tapering rapidly distally to acutely pointed end with fine setae.

Variation: A remarkably uniform and easily recognisable species. There is some variation in size, the smallest specimen having a wing length of 5.3 mm (the holotype is one of the larger specimens).

Type material: SOUTH AFRICA: 1♀ **paratype**, 'Sth Africa Cape Prov / Aninaus Pass 2917BA / 15km W. of Steinkopf / 4.ix.1983 J Londt & / B Stuckenberg Rocky / hillside & dry river'; 1♂ **holotype**, 1♂ 1♀ **paratypes**, 'Sth Africa Cape Prov / 25km N. Kamieskroon / 2917DD 5.ix.1983 / Stuckenberg & Londt / Rocky hillside veget.'; 1♀ **paratype**, 'Cape Province / Namaqualand / Springbok, Hester / Malan Nature Res. [= Goegap Nature Reserve 29°40'S 18°00'E] / 15-21.x.1987 / F.W. and S.K. Gess' (AMGS); 1♀ **paratype**, 'Sth Africa Cape Prov / 17km S. Kamieskroon / 3017BD 5.ix.1983 / Londt & Stuckenberg / Slope with succulent / plants and bushes'; 1♂ **paratype**, 'Sth Africa Cape Prov / 10km E Garies / 3017DB 3.ix.1981 / J. Londt, L. Schoemen / and B. Stuckenberg / Succulent Karoo'; 1♀ **paratype**, 'Sth Africa Cape Prov / 8km E of Kamieskroon / 3018AA 5.ix.1983 / Londt & Stuckenberg / Montane old land with / rocks & bushes nearby'; 1♀ **paratype**, 'S Africa: Cape #66 / 23 km S Vanrhysdorp / 31°47'S 18°46'E 600m / Date: 2-4.xi.1991 / Coll: J.G.H. Londt / Gifberg Flat summit'; 2♀ **paratypes**, 'Sth Africa Cape Prov / Gifberg. 23km SE Van / Rhynsdorp. 3118DC / Date: 15 Sept. 1982 / Coll: L.E. Schoeman'; 1♂ 1♀ **paratypes**, 'N. Cape / Nieuwoudtville / Flower Res. / 3119Ac / 16 Oct. 1996 / VB Whitehead' (SAMC); 1♀ **paratype**, 'S Afr C.P. / Bidouw Valley / 3219AB / VB Whitehead / 4.ix.1983' (SAMC); 1♀ **paratype**, 'Pakhuis Pass [32°09'S 19°02'E] / C.P.' ~ 'S.A.M. / 9: 1961' (SAMC); 2♂ **paratypes**, 'Sth Africa Cape Prov / Vredehoek. Sutherland / 3220BC / Date: 18 Oct. 1981 / Coll: L.E. Schoeman; 1♀ **paratype**, 'S Africa: N Cape #28 / Besemgoedkop 31 km N / of Sutherland 1670m / 32°11'21"S:20°36'03"E / 8.xi.1998 J&B Londt / Rocky ridge Macchia'; 1♀ **paratype**, 'S Africa: Cape #74 / 31 km N of Sutherland / 32°11'S 20°36'E 1600m / Date: 6.xi.1991 / Coll: J.G.H. Londt / Besemgoedkop and area'.

Type locality: South Africa: 25 km N Kamieskroon.

Other material: SOUTH AFRICA: 1?, 'Namaqual. / O'okiep [29°36'S 17°52'E]' ~ 'R. Lightfoot / Oct. 90 [1890]', '*Gonioscelis* / *nigripennis* ♂ / Ric. / det. E.O. Engel' (ZSMC) [Engel (1925) recorded this specimen under *nigripennis*, a species he had not studied. The genitalia are damaged and the gender is indeterminable].

Distribution, phenology and biology (Tables 1–2, Fig. 150): Recorded from the northern parts of the South African west coast (Northern Cape province), the northern parts of the Western Cape province and in the vicinity of Sutherland (also in the Northern Cape). Most localities lie in an area of winter rainfall, with possible exception of more arid places in the south-east of the distribution that lie on the margins of the winter rainfall area. Material has been collected in September, October and November. Individuals rest on the ground, often in high altitude rocky areas with succulent vegetation.

Similar species: A highly distinctive species seemingly similar to *ceresae*, *haemorhous*, *hispidus*, *pickeri* and *scapularis* in that males possess a single distomedial hypandrial projection. However, the species is otherwise somewhat different in being smaller, almost entirely shiny black, and possessing long, laterally compressed prothoracic femoral spurs. Superfically the species appears similar to *punctipennis* and its allies (*chloris*, *exouros*, *kedros*, *iota*, *xanthochaites*), but can be readily separated from these species. At least one specimen has been incorrectly identified as *nigripennis*, probably because of its black colour, but that species is otherwise different.

Gonioscelis nigripennis Ricardo, 1925

Figs 15, 89–91, 149

Gonioscelis nigripennis Ricardo, 1925: 269–270; Engel 1925: 173–174; Oldroyd 1974: 39.

Redescription: Based primarily on syntype ♀ (BMNH), male structures described from syntype ♂ (SAMC).

Head: Antenna dark red-brown to black, setae mostly black. Facial swelling poorly developed, mystax uniform dark red-brown to black, setae in dorsal half not as well developed as those in ventral half. Frons and vertex weakly red-gold pruinose. Ocellar tubercle apruinose with black *oc*. Occiput silver pruinose except for apruinose areas behind vertex, setae black dorsally, dark red-brown ventrally. Proboscis and palpus dark red-brown with dark red-brown setae.

Thorax: Dark red-brown to black, largely apruinose, but with small patches of silver pruinescence. Postpronotal lobes not contrasting in colour with adjacent mesonotum, with 2–3 long black setae. Mesonotal setae black: *ac* tiny; approx. 10 pairs *dc*, clearly extending anterior of transverse suture; 2 *npl*; 2 *sa*; 2 *pa*. Scutellum dark red-brown to black, with 2 black *mrg sct*. Wing length 8.4 mm, membrane mostly blackish. Legs: Femora dark red-brown with orange-brown distal tip, tibiae and tarsi orange-brown. Prothoracic coxa dark red-brown, apruinose, dark red-brown setose; femoral spur (Fig. 15) very bluntly pointed (angle approx. 80°).

Abdomen: Tergites dark red-brown, T2–4 with silver pruinose hind margins and dorsal patches, setae tiny black. Sternites as tergites, appear apruinose (abdomen stuck to cellulose support and difficult to study).

Terminalia (Figs 89–91): Long *ep* (epandrial lobes projecting far beyond proctiger), lobes tapering distally to tips equipped with 2–3 long strong macrosetae (left epandrial lobe cracked); *gcx* tapering distally with two distal projections and a few macrosetae; *hyp*, in ventral view, clearly longer than broad, constricted at mid-length before bilobed apex, each lobe carries a single long macroseta.

Variation: The few specimens available display little individual variation or sexual dimorphism.

Type material (all seen): NAMIBIA: 1♂ **syntype**, 'Erikson's Drift' [17°15'S 14°40'E] / Kunene R. / Mar. 1923' ~ 'S.W. Africa / Mus. Exped.', '*Gonioscelis* / *nigripennis* / n sp Ricardo ♂ Type', 'Holo- / type.', 'SAM-DIP / A008267' (SAMC); 1♀ **syntype**, same date but 'Pres. by Cape Mus.'(BMNH); 2♀ **syntype**, 'Otjimbumbe [17°24'S 14°25'E] / Kunene R. / Mar. 1923' ~ 'S.W. Africa / Mus. Exped.', '*Gonioscelis* / *nigripennis* / n sp Ricardo [one incorrectly labelled as ♂], 'SAM-DIP / A008268' (SAMC).

Type locality: Namibia, Erikson's Drift.

Notes: As Ricardo (1925) designated more than one type, all her specimens must be considered syntypes. There is no need to designate a lectotype. Engel (1925) records '?♀ Namaqua. O'okiep, in coll Hermann. Zoolog. Staatsammlung, München.' (ZSMC). This specimen has been studied and is listed under *melas*.

Distribution, phenology and biology (Tables 1–2, Fig. 149): Known from only two localities along the Kunene River between Namibia and Angola. These places being within the Savanna biome. All known specimens were collected in March.

Similar species: A member of the large and widely distributed group of species possessing a poorly defined facial gibbosity. The species has highly distinctive male genitalia. The hypandrium is particularly characteristic in having inwardly curved distal lobes, each equipped with a single apical macroseta. There is, however, only a single known male and so the extent of possible variation cannot be assessed.

Gonioscelis occipitalis Oldroyd, 1970

Fig. 145

Gonioscelis occipitalis Oldroyd, 1970: 275–276 (Fig. 49 foreleg).

Redescription: Based on holotype ♀ (MRAC).

Head: Antenna broken off beyond pedicels, dark red-brown, setae black. Facial swelling moderately developed, without obvious point at which dorsal region terminates below antennal sockets, mystax black except for a few white setae along epistomal margin. Frons and vertex weak silver pruinose. Ocellar tubercle weakly pruinose, with black *oc*. Occiput silver pruinose except for two apruinose areas behind vertex, setae mostly black, a few white ones mixed with black ventrally. Proboscis and palpus dark red-brown to black, with yellow-brown setae.

Thorax: Dark red-brown to black, red-gold pruinose. Postpronotal lobes dark red-brown to black, not contrasting with adjacent mesonotum, with very short black setae. Mesonotal setae mostly black: *ac* not evident; 3 pairs *dc*, not extending anterior of transverse suture; 2 *npl*; 3 *sa*; 3 *pa* (2 yellow, 1 black). Scutellum black, silver pruinose, with 2 black *mrg sct*. Wing length 7.5 mm, membrane mostly pale brown. Legs: Coxae, trochanters and base of femora dark red-brown, all other parts brown-yellow, macrosetae black, smaller setae mixed black and yellow. Prothoracic coxa dark red-brown to black, gold-silver pruinose, yellow-white setose; femoral spur moderately pointed (angle approx. 40°).

Abdomen: Tergites dark red-brown, silver pruinose, setae black. Sternites similar to tergites.

Terminalia: Male unknown. Unique ♀ holotype not dissected.

Variation: Unknown.

Type material: DR CONGO (Lulua): 1♀ **holotype** (seen), Sandoa [09°41'S 22°52'E] à Kapanga, ix.1928, Dr Walker Musée du Congo (MRAC).

Type locality: Democratic Republic of Congo: Sandoa.

Distribution, phenology and biology (Tables 1–2, Fig. 145): Known only from the type locality.

Similar species: A member of the large and widely distributed group of species possessing a poorly defined facial gibbosity. The position of this species will only be ascertained when more material, including males, becomes available.

Gonioscelis phacopterus Schiner, 1867

Figs 92–94, 148

Gonioscelis phacopterus Schiner, 1867: 362; Engel 1925: 175.

Redescription: Based primarily on holotype ♀ (NHMW).

Head: Antenna dark red-brown to black, setae dark red-brown to black. Facial swelling moderately developed, without obvious point at which dorsal region terminates below antennal sockets, mystax uniform pale, shiny brown-yellow, setae between gibbosity and antennal sockets somewhat smaller than those on gibbosity. Frons and vertex silver pruinose. Ocellar tubercle weakly silver pruinose with dark red-brown *oc*. Occiput silver pruinose, slightly weaker behind vertex, setae short yellow. Proboscis and palpus dark red-brown, pale yellow setose.

Thorax: Dark red-brown to black, mesonotum gold pruinose, pleura silver pruinose. Postpronotal lobes orange, contrasting with adjacent mesonotum, with short yellow-brown setae. Mesonotal setae yellow-brown: *ac* not evident; approx. 5 pairs *dc*, not extending anterior of transverse suture; 2–3 *npl*; 2–3 *sa*; 2–3 *pa*. Scutellum dark red-brown, with 4 yellow-brown *mrg sct*. Wing length 7.7 mm, membrane brown-yellow. Legs: Coxae and trochanters dark red-brown, prothoracic femur, tibia and first tarsomere orange (femur reddish basally on anterior surface), tarsi dark red-brown, mesothoracic legs missing, metathoracic femur and proximal half of tibia orange, femur red-brown dorsally as is distal part of tibia, setae mostly dark red-brown, a few orange. Prothoracic coxa dark red-brown to black, thinly gold pruinose, shiny yellow setose; femoral spur sharply pointed (angle approx. 25°).

Abdomen: Tergites 1–2 dark red-brown to black, T3 similar but with brownish posterior edge, T4 red-brown anteriorly orange-brown distally, T5–8 mostly brown-orange, thinly silver pruinose, setae yellow. Sternites apruinose, S1–2 dark red-brown, rest mostly brown-orange, yellow setose.

Terminalia (Figs 92–94): Epandrial lobes and proctiger projecting to about same level, lobes tapering distally to broadly rounded tips equipped with fine setae; *gcx* distally with two dorsal projections and two more ventrally situated short macrosetae; *hyp*, in ventral view, clearly shorter than broad, tapering rapidly to deeply incised bilobed apex bearing a few short macrosetae and fine setae.

Variation: A species showing little individual variation and sexual dimorphism. The association of the Clifton Farm material with the holotype female is done with confidence as these specimens are almost identical in all important ways strongly suggesting that the holotype was collected in the Eastern Cape.

Type material: SOUTH AFRICA: 1♀ **holotype** (seen), 'Cap', '*phacopterus* / Coll. Winthem', 'Type' (red) (NHMW).

Type locality: Here designated as South Africa: Eastern Cape, Clifton (farm near Grahamstown).

Other material: SOUTH AFRICA: 2♂ 3♀, 'South Afr: Cape Prov / Clifton Farm 22km NW / Grahamstown 3326AB / 3&5.i.1986 J&B Londt / & D Gess. Arid area'; 1♀, 'Cape Province / Clifton [33°11'S 26°24'E] / Grahamstown / 15-i-1981 / D.W. Gess' (AMGS); 1♀, 'Sammlung / F. Hermann', '*Gonioscelis / phacopterus* / Schin.', 'Capland / *Gonioscelis / phacopterus* / ♂ [sic.] Schin.', '*phacopterus* / Schin.' (ZSMC).

Notes: Schiner (1867) gives 'Afrika' as provenance, but the type is clearly labelled 'Cap' thus limiting the distribution to the southern parts of South Africa. The holotype is in fair condition apart from the following: both mesothoracic legs broken off beyond trochanters; terminal four tarsomeres of metathoracic legs and left wing missing; right wing partly torn at mid-length. The ZSMC female, recorded by Engel (1925), may not be correctly identified, but is listed here until verification is possible. Engel's Hex River specimen (listed twice by him – under *phacopterus* and *maculipennis*) does not agree with the type or the Clifton material, but is similar to *hispidus* and so is placed under that species.

Distribution, phenology and biology (Tables 1–2, Fig. 148): Known with certainty only from one locality in the Eastern Cape province of South Africa where it has been collected in January resting on the ground in scrubby areas of bush and grass. According to Dr Fred Gess (Albany Museum) the area would be classified as 'Valley Bushveld', a biome sometimes called 'Thicket'.

Similar species: A member of the large and widely distributed group of species possessing a poorly defined facial gibbosity. This is a distinctive species whose closest relative probably is *lacertosus* (see discussion of that species). The hypandrium has similarities to those of *mantis* and *ventralis*, but other features clearly separate the species.

Gonioscelis pickeri sp. n.

Figs 95–97, 152

Etymology: Named for Dr Michael Picker whose collecting activities in the Western Cape have resulted in significant donations of asilids to the Natal Museum – including the holotype of this species.

Description: Based primarily on holotype ♂ (NMSA).

Head: Antennal scape and pedicel orange, postpedicel and style dark red-brown, orange setose. Facial swelling pronounced, mystax mostly white (a few orange or brown setae in dorsal part) asetose between gibbosity and antennal sockets. Frons and vertex thinly gold pruinose. Ocellar tubercle weak silver-gold pruinose with orange-brown *oc*. Occiput gold pruinose (silver along eye margin), setae orange dorsally and centrally, pale yellow-white ventrally. Proboscis dark red-brown with white setae, palpus orange-brown, white setose.

Thorax: Dark red-brown, gold pruinose. Postpronotal lobes orange-brown, contrasting somewhat with mesonotum although adjacent parts not greatly different, with a group of strong orange macrosetae. Mesonotal setae: *ac* weak, black anteriorly; approx. 20 pairs *dc*, orange (a few orange-brown anterior of transverse suture), clearly extending anterior of transverse suture; 4 orange-brown *npl*; 4–5 brown-orange *sa*; 7–8 brown-orange *pa*. Scutellum dark red-brown to black, with 6 brown-orange *mrg sct*. Wing length 10.8 mm, membrane mostly pale yellow. Legs: Brown-orange, setae orange and yellow. Prothoracic coxa dark red-brown, thinly gold pruinose, yellow and white setose except for dark red-brown setae on spur; femoral spur sharply pointed (angle approx. 25°).

Abdomen: Tergites dark red-brown to black, silver pruinose, fine yellow-white setose. Sternites similar to tergites.

Terminalia (Figs 95–97): Epandrial lobes and proctiger projecting to about same level, lobes tapering distally to slightly downturned tips equipped with fine setae; *gcx* parallel-sided (viewed laterally), distally with two dorsal projections and a ventral broadly-rounded lobe; *hyp*, in ventral view, slightly broader than long, tapering moderately to mid-length before rapidly tapering to mediodistal finger-like projection bearing long fine setae.

Variation: A very variable species with respect to general coloration. Setae described as being yellow or orange may be black while antennal segments and leg coloration described as orange may be black. This variation is found sympatrically as well as allopatrically. There is, however, reasonable uniformity in male genital morphology. The similarity to *haemorhous* and *hispidus* mentioned below suggests that a far more detailed study of these species, based on more material from many more localities, is necessary.

Type material: Confined to specimens from the Biedouw Valley and Kamieskroon area as reliably identifiable male specimens are available from these places: SOUTH AFRICA: 1♂ **paratype**, 'Kamieskroon / SE 3017Bb / 16-ix-1983 / E de Wet'; 1♂ 2♀ **paratypes**, 'Sth Africa Cape Prov / 17km S. Kamieskroon / 3017BD 5.ix.1983 / Londt & Stuckenberg / Slopes with succulent / plants and bushes'; 1♂ 1♀ **paratypes**, 'South Africa: W. Cape / 10km e. Kamieskroon / 17-x-1977 3018AA / Ray M. Miller 630m'; 1♂ **holotype**, 5♂ 6♀ **paratypes**, 'S. Africa: SW Cap #102 / Biedouw Valley / 32°06'S 19°14'E 350m / 1-12.ii.1991, M. Picker / Succulent Karoo'; 1♀ **paratype**, 'Sth Africa: Cape Prov / Biedou Valley 300m / 32°06'00"S:19°19'00"E / J Londt B Stuckenberg / & P Croeser 6.ix.1989 / Rocky gentle N slope / Scrub & wild flowers'; 1♀ **paratype**, 'Biedouw Valley / Namaqualand / 24/9/89 / M Picker/B Leon'.

Type locality: South Africa: Western Cape Province, Biedouw Valley.

Other material: SOUTH AFRICA: 2♂ 4♀, 'Namaqual. / O'okiep. [29°36'S 17°52'E]' ~ 'Lightfoot / Sep. 90' (SAMC); 1♀, 'Springbok [29°40'S 17°53'E] / 20-21.ix.1970 / Potgieter & Snyman'; 1♂ 1♀, 'Cape Province / Namaqualand / Mesklip / 29°48'S, 17°52'E / 1.x.1985 / F.W. & S.K. Gess' (AMGS); 1♀, 'South Africa, Cape Prov. / 13.5 mi. SSW Springbok / nr Neweputs Farm, 2600 ft / Sept. 7, 1972, ME & BJ Irwin / 2917Dd'; 1♀, 'R.S.A.: N Cape #82 / Goegap Nature Reserve / 29°40'S 18°00'E 870m / Date: 23.viii.1995 / Coll: J. & A. Londt / Flowers Dry stream bed'; 1♀, 'Sth Africa: Cape Prov / 78 km S of Springbok / 30°01'30"S:17°52'30"E / 31.viii.1989 700m / B Stuckenberg J Londt / P Croeser Sandy area / 4km S Bufelsrivier'; 2♂, 'Cape Province / Namaqualand / Sors Sors / 30.08S 18.01E / 30.ix.1995 / F.W., S.K. & R.W. Gess', 'shaken from / Rhenosterbos' (AMGS); 1♂, 'Cape Province / Namaqualand, Kamies- / berg, Bakleikraal / 30.13S 18.03E / 28.ix.1995 / F.W., S.K. & R.W. Gess' (AMGS);

1♀, 'Cape Province / Namaqualand, Kamies- / berg, Bakleikraal / 30.13S 18.03E / 28.ix.1995 / F.W., S.K. & R.W. Gess' [Coleoptera: Scarabaeidae] (AMGS); 1♂, 'S. Afr. CP / Karagams E / 3018Ac / 23.8.1985 / V B Whitehead / M Macpherson' (SAMC); 1♀, 'Klaver [31°47'S 18°37'E] C.C. / 19.9.1917 / A. Roberts'; 1♀, 'Cape Province / Nieuwoudtville / Skuinshoogte Pass / 31.16S 19.08E / 23-30.ix.1994 / F.W. & S.K. Gess' (AMGS); 1♂, '5m. N. of / Nieuwoudt- / ville [31°22'S 19°06'E]' ~ 'S.A.M. / 9:1961' (SAMC); 1♀, 'Cape Province / 10km E of Nieuwoudt- / ville [31°22'E:19°06'E] on road to / Calvinia, 4.x.1989 / F.W. & S.K. Gess' (AMGS); 1♂, 'South Africa, W. Cape Prov. / 54 km NE Clanwilliam, base of / Botterkloof Pass; 12-ix-1996 / K. C. Holston; 490m. / 31°50'22"S. 19°16'01"E', 'Schlinger Foundation South / Africa & Namibia Expedition / Oct.-Dec. 1996', 'INHS / Insect Collection / 33,508' (INHS); 3♂ 1♀, 'Graafwater [32°09'S 18°36'E] / C.P.' ~ 'Mus., Exp., / Oct., 1947.' (SAMC); 2♂, 'Ysterfontein [=Yzerfontein 32°11'S 18°46'E]' ~ 'S.A.M. / 9:60' (SAMC); 3♀, 'Cape Province / Clanwilliam [32°11'S 18°54'E] District / Klein Alexandershoek / 32°20'20"S, 18°46'E / 28.ix.1985 / F.W. and S.K. Gess' (AMGS); 4♂, '4 m. S. of / Clanwilliam [32°11'S 18°54'E] / C.P.' ~ 'S.A.M. / 9:1961' (SAMC).

Notes: *G. pickeri* and *scapularis* are sympatric at 4 m. S. of Clanwilliam. As *scapularis* dominates the SAMC samples, and females are not readily separable, all females are listed under *scapularis*.

Distribution, phenology and biology (Tables 1–2, Fig. 152): Confined to the western parts of South Africa (Northern Cape and Western Cape provinces) between Springbok and the Clanwilliam area. This area lies entirely within the Succulent Karoo biome. It is interesting that a gap appears to exist between two concentrated groups of records. The gap corresponds with a poorly accessed area, centred on Bitterfontein and Nuwerus, renowned for being particularly arid and going by the Afrikaans name Knersvlakte. The absence of material from this area probably reflects inadequate sampling. Most of the material has been collected between August and October, but a good series collected in February suggests a much longer period of adult activity. There are six Natal Museum prey records as follows: 1♂ 5♀ (78 km S Springbok 1; Biedouw Valley 5) – Coleoptera (Scarabaeidae 4), Diptera (Asilidae 1 – *G. maculiventris*), Hemiptera (Alydidae 1).

Similar species: A species closely related to *ceresae*, *haemorhous*, *hispidus* and *scapularis* in that males possess a single distomedial hypandrial projection. The hypandrium is, however, somewhat longer, and somewhat upturned when compared with the other species. Like *hispidus* the epandrial lobes taper gently toward their apices in lateral view. It is possible that all these species are no more than geographical variants of one species, but more information is required before this can be ascertained. *G. melas* also has males with a single distomedial hypandrial process, but is otherwise different and perhaps more closely related to *punctipennis* and its allies (see comment under *melas*).

Gonioscelis pruinosus Ricardo, 1925

Figs 98–100, 145

Gonioscelis pruinosus Ricardo, 1925: 267–268.

Redescription: Based mainly on ♂ syntypes (BMNH), but as these lack heads, details provided are for a syntype ♀ whose head is intact.

Head: Antenna dark red-brown to black, setae mostly dark red-brown and dark brown. Facial swelling moderately developed, without obvious point at which dorsal region terminates below antennal sockets, a second smaller swelling between main gibbosity and antennal sockets, mystax uniform mostly white, some setae located between main gibbosity and antennal sockets brown. Frons and vertex silver pruinose. Ocellar tubercle apruinose with dark brown *oc*. Occiput gold pruinose except for weakly apruinose areas behind vertex, setae pale yellow-white. Proboscis and palpus dark red-brown, pale yellow-white setose.

Thorax: Dark brown, gold pruinose. Postpronotal lobes mostly yellow, contrasting with adjacent mesonotum, with 4–5 macrosetae and smaller yellow setae. Mesonotal setae: *ac* not evident; *dc* mostly broken, black, and do not appear to extend anterior of transverse suture; 2 black *npl*; 2–3 *sa* (missing, but sockets visible); 4 mixed dark red-brown or pale yellow-white *pa*. Scutellum dark brown, with 2–3 *mrg sct* (missing). Wing length 7.4 mm, membrane mostly pale yellow. Legs: Brown-yellow, prothoracic femur brown-red anteriorly in proximal part, setae mixed black or yellow. Prothoracic coxa dark red-brown, thinly gold pruinose, whitish setose; femoral spur bluntly pointed (angle approx. 65°).

Abdomen: Tergites brown, silver pruinose, setae mostly yellow, well developed on T1–2 where a few brown ones occur. Sternites similar to tergites but all setae short yellow.

Terminalia (Figs 98–100): Long *ep* (epandrial lobes project beyond level achieved by proctiger), lobes tapering distally to slightly downturned tips equipped with a group of short macrosetae; *gcx* distally with three dorsal projections and a few fine setae; *hyp*, in ventral view, slightly longer than broad, tapering gradually to bilobed apex, lobes widely separated and equipped with terminal macrosetae.

Variation: A species showing slight individual variation and sexual dimorphism, but limited material does not allow adequate assessment to be made.

Type material (all seen): KENYA: 1♂ 2♀ **syntypes**, Brit. E. Afr, Narok [01°25'S 34°55'E], Masai Reserve, 17.ii.1914 (♂) 26.ii.1914 (2♀), Capt. A.C. Luckman BM 1924-207 (BMNH); 1♀ **syntype**, 'Brit. E. Africa. / Ngare Narok. / Marai Reserve. / 31.12.13. about 6,000 ft. / A. O. Luckman.', 'Presented by G. Ricardo / *Gonioscelis pruinosus* ♀ / n sp Ricardo', 'Paratype ♀', 'SAM-DIP / A008272' (SAMC).

Type locality: Here designated as Kenya: Narok.

Other material: KENYA: 1♂, 'Kenya: Matembur / 01°22'N 35°03'E 1550m / 26-27.v.1980 Lamoral / Malaise trap'; 1♀, 'Brit. E. Afr / Narosura [01°32'S 35°52'E] / Masai Reserve / 1.iii.1914, 6500 ft / , Capt. A.O. Luckman' (BMNH) [probably seen by Ricardo but not mentioned in her paper and therefore without type status]; 1♀, 'Pres. by / Imp. Bur. Ent. / Brit. Mus. / 1924-298.' 'Brit. E. Afr. / Between Guaso Nycto & Narosura / Masai Reserve / 27.ii.1914 / Capt. A.O. Luckman.' (BMNH); 1♂, 'Kenya Colony: / Nairobi [01°17'S 36°49'E] / iii.1922 / De. V.G.L. van Someren. / B.M. 1923-87.' (BMNH). TANZANIA: 1♂, 'Tanzania: Ngorongoro / Crater National Park [03°10'S 35°35'E] / Hdqtrs. 25-xi-1969 / M.E. Irwin & / E.S. Ross' (CASC); 1♂, 'Kenya Colony / Solai Dist. / Sonje Valley / Laikipia Escarp. [00°25'N 36°08'E] / 12.ix.1919 / T.J. Anderson' (ID *G. andersoni* sp. n. Bromley 1945 – unpublished) (NMNH). UGANDA: 1♂ 1♀, 'Uganda / Karamoja / Atumatak [Atumutaok 02°14'N 34°38'E] / 17.4.1962 /

J. Bowden' (BMNH); 2♂ 1♀, 'Uganda: / Lake Nabugabo [00°22'S 31°54'E] / 17.iv.1972 / D.J. Greathead' (BMNH). UNKNOWN: 1♂, '29. 1-1-12', '*G.* / *ventralis* / Schin. / det. Engel', '*Gonioscelis* / *ventralis* Schin / det. E.O. Engel ♂' (ZSMC).

Notes: Ricardo (1925) designated more than one type and so all her specimens are considered syntypes. I do not believe it necessary to designate a lectotype. The BMNH ♂ and 1♀ 'types' have labels indicating gender reversals. Some syntypes have their heads broken off. A loose head found next to the specimens was gummed to a lectotype label. As its mystax is dark red-brown it is supposed that some sexual dimorphism exists, but as there is no certainty that this head actually belongs to one of the syntypes, this may be incorrect.

Distribution, phenology and biology (Tables 1–2, 145): An East African species that straddles the equator, being recorded from Uganda, Kenya and Tanzania, almost throughout the year.

Similar species: A member of the large and widely distributed group of species possessing a poorly defined facial gibbosity. As mentioned elsewhere, the species is similar to *macquartii* and found sympatrically. Female specimens are difficult to identify in the absence of associated males.

Gonioscelis punctipennis Engel, 1925

Figs 5, 8, 101–103, 151

Gonioscelis punctipennis Engel, 1925: 170–171.

Redescription: Based primarily on holotype ♀ (ZMHB), but supplemented by information from other specimens.

Head: Antennal scape and pedicel orange-brown, postpedicel and style brown, setae mostly white. Facial swelling pronounced (Fig. 5), mystax black with two vertical rows of white setae among black ones (none between gibbosity and antennal sockets). Frons and vertex largely apruinose (frons slightly gold pruinose). Ocellar tubercle apruinose with black *oc*. Occiput silver pruinose, pronounced silver streak behind vertex, setae ranging from dark red-brown and yellow dorsally, through yellow to white ventrally. Proboscis and palpus dark red-brown, with white setae.

Thorax: Dark red-brown to black, silver pruinose. Postpronotal lobes and narrow adjacent border orange, contrasting with rest of mesonotum, pale yellow and white setose. Mesonotal setae: *ac* black, a few anteriorly and posteriorly only (central area without setae); approx. 17 pairs *dc*, strong, black, clearly extending anterior of transverse suture; 3 *npl* (1 each of yellow, brown and black); 7 black *sa* plus few tiny black setae; 3 black *pa*. Scutellum yellow-brown with dark red-brown anterior margin, silver pruinose, with 4 black *mrg sct*. Wing length 11.2 mm, membrane mostly hyaline with dark brown microtrichia at crossveins (giving wings a spotted appearance – Fig. 8). Legs: All femora yellow with red-brown proximal ends (more extensive on prothoracic femora where proximal half is red-brown), tibiae yellow with red-brown distal ends, tarsi red-brown except for yellow pro- and mesothoracic basitarsi, setae white except for a few black ones on femoral spur, tibiae and tarsi. Prothoracic coxa dark red-brown, silver pruinose, white setose; femoral spur sharply pointed (angle approx. 20°).

Abdomen: Tergites red-brown except for narrow yellow-brown hind margins, weakly silver pruinose anteriorly (most tergites apruinose), setae white. Sternites red-brown, apruinose, white setose.

Terminalia (Figs 101–103): Long *ep* (epandrial lobes project beyond level achieved by proctiger), lobes tapering distally to tips equipped with a group of long macrosetae; *gcx* distally with three dorsal projections and a few fine setae; *hyp*, in ventral view, slightly broader than long, tapering moderately quickly to shallowly bilobed apex equipped with long fine terminal macrosetae.

Variation: A remarkably constant species showing little variation or sexual dimorphism.

Type material: SOUTH AFRICA: 1♀ **holotype** (seen), 'Caffraria, Drège S.', '471', '*G. punctipennis* / det. Engel n. sp. / Type!', 'Holotypus', 'Zool. Mus. / Berlin' (ZMHB).

Type locality: Here designated as South Africa: 25 km N Kamieskroon.

Other material: SOUTH AFRICA: 1♂ 4♀, 'Sth Africa: Cape Prov. Richtersveld 9km S / Lekkersing 2.ix.1989 / 29°03'30"S:17°07'30"E / J Londt B Stuckenberg / & P Croeser Karragab / kloof rocky area 300m'; 1♀, Sth Africa: N Cape / 12 km S of Lekkersing / 29°06'15"S:17°05'27"E / 26.viii.2002 JGH Londt / 300m Rocky hillside'; 3♂ 3♀, 'Sth Africa Cape Prov / Aninaus Pass 2917BA / 4.ix.1983 J Londt & / B Stuckenberg Rocky / hillside & dry river'; 1♀, 'S. Africa: 20 mi. N. / Steinkopf, [29°15'S 17°44'E] 700m. / 24-ix-1967 / E.S. Ross & / A.R. Stephen' (CASC); 1♀, Sth Africa: N Cape / Anenous Pass 17 km / W Steinkopf 630m / 29°13'56"S:17°36'06"E / 28.viii.2002 JGH Londt / Rocky hillside area; 1♀, 'Sth Africa: N Cape / 7 km SSE Nababeep / 29°37'13"S:17°50'29"E / 24.viii.2002 JGH Londt / 1020m Rocky hillside / with sandy areas below'; 2♂ 2♀, 'R.S.A.: N Cape #84 / 11km N of Komaggas / 29°43'S 17°31'E 360m / Date: 24.viii.1995 / Coll: J. & A. Londt / Rocky slope Flowers'; 1♀, 'R.S.A.: N Cape #85 / 5km N of Komaggas / 29°45'S 17°31'E 390m / Date: 24.viii.1995 / Coll: J. & A. Londt / Rocky slope Macchia'; 2♂ 6♀, 'Sth Africa Cape Prov / 25km N Kamieskroon / 2917DD 5.ix.1983 / Stuckenberg & Londt / Rocky hillside veget'; 1♂, 'Sth Africa Cape Prov / 20km NE Springbok / 2918CA 7.ix.1983 / Londt & Stuckenberg / Rocky hillside & dry / watercourse veget.'; 1♂, 'Sth Africa: Cape Prov / 78km S of Springbok / 30°01'30"S:17°52'30"E / 31.viii.1989 700m / B Stuckenberg J Londt / P Croeser Sandy area / 4km S Bufelsrivier'; 1♂, 'R.S.A.: N Cape #86 / Skilpad Nature Reserve / 30°10'S 17°47'E 700m / Date: 25.viii.1995 / Coll: J. & A. Londt / Old lands Rocky hill'; 1♂ 1♀ 'Bowesdorp [30°09'S 17°56'E] / Namaqualand / SA Museum' ~ 'Mus. Staff / Sept. 1941' (SAMC); 1♀, Between Kamieskroon [30°12'S 17°56'E] / and Springbok / Namaqualand' ~ 'Mus. Staff / Oct. 1939' (SAMC); 1♂ 1♀, 'Sth Africa Cape Prov / 10km E Garies / 3017BD 3.ix.1981 / J. Londt, L. Schoeman / and B. Stuckenberg. / Succulent Karoo'; 1♀, 'South Africa: Cape / Prov.; 7 km SE Garies [30°33'S 17°59'E] / 9-ix-1984 / Me E. Irwin / damp wash', 'INHS / Insect Collection / 34,113' (INHS); 2♂ 4♀, 'R.S.A.: N Cape #94 / 21km NE Garies / 30°27'S 18°04'E 810m / Date: 27.viii.1995 / Coll: J. & A. Londt / Studers Pass Stream'; 1♀, 'Sth Africa Cape Prov / 8km E of Kamieskroon / 3018AA 5.ix.1983 / Londt & Stuckenberg / Montane old land with / rocks & bushes nearby'; 3♂, 'Sth Africa Cape Prov / Studers Pass 22km NE / of Garies 3018AC / 6.ix.1983 J Londt & / B Stuckenberg Stream / edge & rocky slopes'; 6♂ 9♀, 'Sth Africa Cape Prov / 10km W Garies / 3018CA 3.ix.1981 / J. Londt, L. Schoeman / and B. Stuckenberg. / Namaqual. Broken veld'; 2♂ 4♀, 'Sth

Africa Cape Prov / 5km N Niewoudville / 3119AC 5.ix.1981 / J. Londt, L. Schoeman / and B. Stuckenberg. / W. Mountain Karoo'; 1♂ 1♀ , 'Sth Africa Cape Prov / Wolwehoek / 31°51'S 20°34'E / Date: 26 Oct. 1981 / Coll: L. E. Schoeman'.

Distribution, phenology and biology (Tables 1–2, Fig. 151): Distribution extending from the Richtersveld in the north to the Roggeveldberge, west of Middelpos, in the south. All localities are within the Northern Cape province of South Africa and fall within the Succulent Karoo biome. The species has been found from August to October. Specimens frequently rest on boulders in rocky areas. There are five Natal Museum prey records as follows: 1♂ 4♀ (10 km W Garies 3; 11 km N Komaggas 1; 25 km N Kamieskroon 1) – Coleoptera (Scarabaeidae 2, Undetermined 1), Hemiptera (Pentatomidae 1), Isoptera (Hodotermitidae 1).

Similar species: Closely related to other spotted-winged species (*chloris*, *exouros* and *kedros*) of the west coast of southern Africa. The species is most similar to *exouros*, known only from the Richtersveld, and it is mainly the differently formed proctiger that separates them.

Gonioscelis ramphis sp. n.

Figs 104–106, 149

Gonioscelis ventralis: Engel 1925: 167 (Fig. 2 ♂ genitalia) (misidentification).

Etymology: Gr. *ramphis* – hook. Refers to the strongly down-turned or hooked epandrial lobes.

Description: Based primarily on holotype ♂ (NMSA).

Head: Antenna dark red-brown to black, a little orange at junction between pedicel and postpedicel, short yellow setose. Facial swelling poorly developed, mystax uniform yellow-white, somewhat weaker between antennal sockets and gibbosity. Frons and vertex thinly gold pruinose. Ocellar tubercle weakly pruinose with yellow *oc*. Occiput silver-gold pruinose, setae yellow-white. Proboscis and palpus dark red-brown, pale yellow setose.

Thorax: Dark red-brown to black, silver-gold pruinose. Postpronotal lobes (and small part of adjacent mesonotum) orange, contrasting with mesonotum, with small yellow setae. Mesonotal setae yellow-white: *ac* not evident; *dc* 5 pairs, not extending anterior of transverse suture; 3 *npl*; 3–4 *sa*; 3 *pa*. Scutellum dark red-brown to black, with 4 yellow-white *mrg sct*. Wing length 8.5 mm, membrane mostly yellow. Legs: Mostly orange, dark red-brown areas as follows – proximal part of anterior face of prothoracic femur, narrow ventral strip on meso- and metathoracic femora, macrosetae black, a few white on pro- and mesothoracic tibiae. Prothoracic coxa dark red-brown to black, silver-gold pruinose, yellow-white setose; femoral spur moderately pointed (angle approx. 50°).

Abdomen: Tergites dark red-brown to black, silver pruinose, setae short yellow except on T1 where they are longer. Sternites similar to tergites but apruinose, with setae tiny yellow.

Terminalia (Figs 104–106): Proctiger slightly shorter than *ep*, *ep* lobes with strongly downturned and tapering tips equipped with fine setae; *gcx* distally with two dorsodistal projections and a group of short macrosetae; *hyp*, in ventral view, slightly broader than long, tapering moderately quickly to about mid-length and terminating in a bilobed apex equipped with short fine setae. The illustration provided by Engel (1925, Fig. 2) clearly represents *ramphis* and was probably drawn from the Waterberg material he studied.

Variation: A reasonably constant species demonstrating only slight individual variation and sexual dimorphism. Some size variation is noted in the Leon Taljaard material (i.e. wing length: shortest – 9.1 mm, longest – 11.8 mm).

Type material: BOTSWANA: 1♂ 1♀ **paratypes**, 'Mahalapye [23°04'S 26°50'E] / Bechuanaland / T. Schofield / iv.1960'. SOUTH AFRICA: 1♂ **paratype**, 'South Africa. Transvaal / Kruger Park 5-I-1974 2431Db / 20km NNE of Tshokwane / near road junction S35-S37 / B&P Stuckenberg open savanna'; 1♂ **holotype**, 1♂ 4♀ **paratypes**, Sth Africa: Transvaal / Kruger National Park / Vicinity of Skukuza / 9-12.iv.1985 J. Londt / SE2431DC Bushveld'; 1♀ **paratype**, 'S Africa: NW Province / Botsalano Game Reserve / Mogalodi Hide area / 25°33'15"S:25°40'16"E / 1350m 18.iii.2003 J Londt / *Rhus*, *Acacia* savanna'; 2♂ 2♀ **paratypes**, 'Platriver [Plat River 25°10'S 28°05'E] / Wtb. [Waterberg] Distr. / 1-11 [? ii or xi] 1903 / R. v. Jutrencha', 'Ex Coll / Transv. Mus', 'Sammlung / F. Hermann', 'Afr. Orient. / *Gonioscelis* / *ventralis* / ♂ Schin.' (ZSMC); 2♀ 1? **paratypes**, 'Waterberg / Dist. 1898-99 / v. Jutrzencka', 'Ex Coll / Transv. Mus', '*xanthopus'*, '*G.* / *ventralis* / det. Engel', '*Gonioscelis* / *ventralis* Schin. / det. E.O. Engel ♀' (ZSMC); 1♂ 2♀ **paratypes**, 'S Africa: NW Province / Leon Taljaard Nature Reserve / 26°55'32"S:24°41'55"E / 1230m 13.iii.2003 J Londt / *Acacia Erogrostis* savanna'.

Other material: ZIMBABWE: 1♀, '29 Nov 09 / Bulawayo [20°09'S 28°35'E] / *2 illegible words*' (ID *G. longulus* by Bromley 1945) (NMNH).

Type locality: South Africa: Kruger National Park, Vicinity of Skukuza.

Notes: Engel (1925), under *G. ventralis*, listed '5♀♀, 2♂♂ Waterberg' as being in ZSMC. I have seen 2♂ 2♀ 1? from the Waterberg (listed above) that I believe to be some of these specimens. Engel's Fig. 2 was with little doubt drawn from one of these males and accurately portrays the genital form. The single Zimbabwean female misidentified by Bromley as *longulus* is listed above, but as the specimen is in poor condition confirmation of this range is required.

Distribution, phenology and biology (Tables 1–2, Fig. 149): A relatively poorly collected species found in the north-eastern parts of South Africa and possibly in south-west Zimbabwe. Confirmed records fall within a triangle over eastern Botswana, the North West and Mpumalanga Provinces of South Africa. All records occur within the vast Savanna biome, so a much wider distribution may be anticipated. Collections have been made between January and April (no records for February). The species rests on low vegetation in savanna mostly dominated by *Acacia* species. There is one Natal Museum prey record as follows: 1♀ (Kruger National Park) – Lepidoptera (Ctenuchidae).

Similar species: A member of the large and widely distributed group of species possessing a poorly defined facial gibbosity. This fairly distinctive species is perhaps most similar to *ventralis* and *hadrocantha* with respect to genital form (bilobed hypandrium and distally down-turned epandrial lobes). The hypandrium is long and shows some similarity to species occurring further north (e.g. *batyleon* and *congoensis*) while the down-turned part of the epandrial lobes is far more pointed than seen in *ventralis* and *hadrocantha*.

Gonioscelis scapularis (Macquart, 1838)

Figs 107–109, 147

Dasypogon scapularis Macquart, 1838: 44 [1839: 160].

Redescription: Based primarily on holotype ♀ (MNHN).

Head: Antenna brown-yellow, setae dark red-brown and yellow. Facial swelling pronounced, mystax white in ventral two-thirds, dark red-brown in dorsal one-third, setae confined to gibbosity. Frons and vertex gold pruinose. Ocellar tubercle gold pruinose with many dark red-brown *oc*. Occiput gold pruinose, setae yellow. Proboscis and palpus dark red-brown, white setose.

Thorax (dirty and damaged): Dark red-brown, gold pruinose. Postpronotal lobes orange, contrasting with adjacent mesonotum, with long yellow-orange macrosetae and shorter yellow setae. Mesonotal setae: *ac* black; approx. 2–3 pairs *dc*, black, just extending anterior of transverse suture; approx. 5 yellow *npl*; 8–9 yellow and dark red-brown *sa*; approx. 5 yellow *pa*. Scutellum dark brown, with 4 yellow *mrg sct*. Wing length 8.7 mm, membrane yellow. Legs: Prothoracic mostly brown-yellow, spur region brown-red, mesothoracic brown-yellow, femur with brown-red dorsal parts, metathoracic brown, femur with brown-yellow posterodorsal stripe, setae pale yellow-white. Prothoracic coxa black, gold-silver pruinose, white setose; femoral spur variable but acutely pointed (angle approx. 20–30°).

Abdomen: Tergites mostly dark red-brown (T6–8 orange-brown), gold pruinose, fine yellow setose. Sternites similar but last few yellowish.

Terminalia: ♀ holotype not dissected. ♂ terminalia (Figs 107–109): Long *ep*, in dorsal view projecting further than proctiger, lobes not tapering greatly, each with a cluster of thick black setae positioned just before a downturned broadly rounded mostly asetose distal end; *gcx* distally with three distal projections, the most distal having a few fine setae associated with it; *hyp*, in ventral view, clearly longer than broad, upturned just beyond mid-length and tapering rapidly to a terminal almost club-shaped apex equipped with long fine setae.

Variation: Some individual variation is evident in the coloration of mesonotal macrosetae (lateral ones may be yellow or black) and legs (the extent of dark red-brown marks varies). Male genitalia are remarkably constant in form.

Type material: AFRICA: 1♀ **holotype** (seen), Afrique, Delalande, 586 (MNHN).

Type locality: Here designated as South Africa: 4 km S. Clanwilliam.

Other material: SOUTH AFRICA: 3♂ 4♀, 'Near / Doornbosch [= Doringbos 2919CC]' ~ 'S.A.M. / 9:1961' (SAMC); 1♂ 4♀, 'Giftsberg [= Gifberg 31°47'S 18°46'E], / Rhynsdorp. / C.C. Sept. 1911' (SAMC); 1♂ 3♀, 'Clanwilliam / Nardouw [Mountains 31°55'S 18°45'E] / S.A. Museum' ~ 'Mus. Staff / Sept. 1941' (SAMC); 3♂ 1♀, 'Sth Africa Cape Prov / 30km S Clanwilliam / 3218BD 31.viii.1981 / J. Londt, L. Schoeman and B. Stuckenberg. / Karroid broken veld'; 2♂ 4♀, 'Sth Africa: Cape Prov / 4km SW Clanwilliam / 32°11'30"S:18°52'20"E / 28.viii.1989 225m / J Londt, B Stuckenberg / &

P Croeser Sandy E slope macchia nr dam'; 1♂ 1?, 'South Africa / Clanwilliam [32°11'S 18°54'E] / Sept. 1947 / S. Walters'; 17♂ 37♀, '4 m. S. of / Clanwilliam [32°11'S 18°54'E] / C.P.' ~ 'S.A.M. / 9:1961' (SAMC).1♂, 'S Afr C.P. / 25 km S / Clanwilliam / VB Whitehead / 30 Sept. 1981' (SAMC); 1♂, 'Paleisheuwel [32°18'S 18°43'E] / C.P.' ~ 'Mus., Exp., / Nov. 1948.' (SAMC); 7♂ 16♀, 'Het Kruis [32°36'S 18°45'E] / C.P.' ~ 'Mus. Exp. / Oct. 1947' (SAMC); 2♂, 'Sth Africa: Cape Prov / Biedou Valley 300m / 32°06'00"S:19°19'00"E / J Londt, B Stuckenberg / & P Croeser 6.ix.1989 / Rocky gentle N slope / Scrub & wild flowers'; 3♂ 4♀, 'S. Africa: SW Cap #102 / Biedouw Valley / 32°06'S 19°14'E 350m / 1-12.ii.1991, M. Picker / Succulent Karoo'; 1♀, 'Biedouw Valley / Namaqualand / 24/9/89 / M Picker/B Leon'; 1♂ 1♀, 'Pakhuis Pass [32°09'S 19°02'E] 950m / Clanwilliam Dist. / 17-19 Oct 1964 / B & P Stuckenberg'; 3♂ 1♀, 'Pakhuis Pass / C.P.' ~ 'S.A.M. / 9: 1961' (SAMC); 2♂ 5♀, '8 m. N. of / Citrusdal [32°35'S 19°01'E]' ~ 'S.A.M. / 9: 1961' (SAMC).

Notes: Londt (1985: 48) transferred *scapularis* to *Gonioscelis*. Macquart states that the type was from 'Du Cap', but the label does not record this information. Macquart also indicated that the type was a male, but examination shows it to be a female. Material of a species identified by Hesse as *setosus* agrees very closely with the holotype and so it is now possible to describe the male of this species.

Distribution, phenology and biology (Tables 1–2, Fig. 147): The species appears to be confined to a fairly small area centred on the town of Clanwilliam, where it occurs sympatrically with *pickeri* whose females are indistinguishable from *scapularis* females (see *pickeri* for comment). All specimens were found in the Succulent Karoo biome and collected between August and November, although one sample bears the month of February which may indicate a longer adult phase (or a mislabeled November collection?). Specimens have been found on the ground in dry scrub areas. There is one Natal Museum prey record as follows: 1♀ (Biedouw Valley) – Coleoptera (Buprestidae).

Similar species: A species closely related to *ceresae*, *haemorhous*, *hispidus* and *pickeri* in that males possess a single distomedial hypandrial projection. The hypandrium, however, is much longer and upwardly curved. The epandrial lobes are characteristically downturned distally in lateral view. It is possible that all these species are geographical variants of one species, but more information is required before this can be ascertained. *G. melas* also has a single distomedial hypandrial process, but is otherwise rather different and perhaps is more closely related to *punctipennis* and its allies (see comment under *melas*).

Gonioscelis submaculatus Speiser, 1910

Figs 2, 110–112, 145

Gonioscelis submaculatus Speiser, 1910: 90.

Redescription: Based primarily on syntype ♀ (NHRS).

Head: Antenna yellow-brown, distal parts of pedicel and postpedicel a bit darker, setae mostly yellow to brown-yellow. Facial swelling poorly developed (Fig. 2), mystax uniform pale yellow-white, setae above gibbosity weaker than those on gibbosity. Frons and vertex gold pruinose. Ocellar tubercle partly gold pruinose with dark red-brown *oc*. Occiput silver pruinose, setae pale yellow-white. Proboscis and palpus dark red-brown, white setose.

Thorax: Dark red-brown and orange patterned, mostly gold-silver pruinose. Postpronotal lobes brown-orange, contrasting with adjacent areas of mesonotum, with few, small pale yellow setae. Mesonotal setae pale yellow: *ac* not evident; approx. 6 pairs (many broken off) *dc*, extending just anterior of transverse suture; 3 *npl*; 4 *sa*; 3 *pa* (most broken). Scutellum dark brown, with 6 pale yellow-white *mrg sct*. Wing length 7.8 mm, membrane mostly pale brown with yellowish veins. Legs: Brown-yellow (including trochanters), setae mostly pale yellow-white. Prothoracic coxa brown-yellow, thinly gold pruinose, white setose; femoral spur moderately pointed (angle approx. 45°).

Abdomen: Tergites dark red-brown, terminal segments becoming increasingly brown-orange, gold pruinose, fine yellow setose. Sternites like tergites but more extensively brown-orange, thinly gold pruinose, yellow setose.

Terminalia: Syntype ♀ not dissected. ♂ terminalia (Figs 110–112): In dorsal view *ep* projecting to about the same distance as proctiger, lobes tapering distally to slightly downturned rounded setose apex; *gcx* distally with two distal projections and a few long macrosetae; *hyp*, in ventral view, shorter than broad, tapering to blunt, truncate, distal end, apex has weakly sclerotised asetose area distomedially.

Variation: The syntypes suggest that there is little individual variation or sexual dimorphism. However there are too few specimens to allow a meaningful assessment.

Type material: TANZANIA: 1♂ 1♀ **syntypes** (seen), 'Meru [03°14'S 36°45'E] / Nieder.', 'Ngare na / nyuki', 'Sjöstedt', 'jan', '*Gonioscelis* / *submaculatus* / P. Speiser det. / Type!' (NHRS) [The smaller ♂ syntype does not have the word 'Type' on the label. Speiser states '1♂, gleicher Provenienz stelle ich nur mit einigen Bedenken dazu'].

Type locality: Tanzania: Meru.

Other material: KENYA: 2♂ 1♀, 'Brit. E. Africa. / S.A. Neave. / B.M. 1912-193.' (BMNH). MALAWI: 9♂ 2♀, 'Pres. by / Imp. Bur. Ent. / Brit. Mus. / 1924-298.', 'H.S. Stannus, / Zomba, [15°23'S 35°20'E] / Nyasaland.', '*Gonioscelis* / *submaculatus* / Speiser ♂' [ID label only on 1♂ 1♀] (BMNH, 1♂ 1♀ NMSA); 1♂ 1♀, 'H.S. Stannus / Zomba, / Nyasaland.', '*Gonioscelis* / *submaculatus* ♂ Speiser' (SAMC) [apparently Ricardo ID]; 1♀, 'C>C1 / Mt. Mlanje, [15°58'S 35°38'E] / Nyassaland, / 25.viii.1913 / S.A. Neave.', 'Pres. by / Imp. Bur. Ent. / 1921-12' [with prey labelled C1<C – Halictidae *Halictus jucundus* Smith ♀] (BMNH); 1♂, 'A>A1 / Valley of / Lower / Shire [Dist. 16°45'S 35°10'E] / Nyassaland, / 6.viii.1913 / S.A. Neave.', 'Pres. by / Imp. Bur. Ent. / 1921-12' [with prey labelled A1<A – Chalcidae *Allodupe* sp.] (BMNH). TANZANIA: 1♀, 'Mufindi [08°36'S 35°17'E] / D.Ost-Afrika / Zumpt x.1938', '*Gonioscelis* / *submaculatus* / Spsr. / Dr. Engel det.' (BMNH). ZIMBABWE: 1♂ 1♀, 'Brit. Mus. / 1911-177.', 'N.E. Rhodesia. / Niamadzi River [? Niamanda Stream 13°08'S 29°54'E], / near Nawalia. / 2000 ft. / 19-20.viii.1910. / S.A. Neave.' (BMNH); 1♀, 'Pres. by / Imp. Bur. Ent. / Brit. Mus. / 1924-298.', 'N.W. Rhodesia / Chilanga. [15°34'S 28°17'E] / 3.viii.13 / R.C. Wood / on path near / river. / 4030' (BMNH); 1♂, 'Pres. by / Imp. Inst. Ent. / Brit. Mus. / 1931-331.', '*Gonioscelis* / *ventralis* / Schin / var. *macqti*. / Jeann.', 'Sawmills. [19°35'S 28°02'E] / S Rhodesia / 9.7.1923 / Rhodesia / Museum.' (BMNH); 1♀, 'Pres. by / Imp. Bur. Ent. / Brit. Mus. / 1931-331.', 'Hope Fountain [20°16'S 28°39'E] / S. Rhodesia / 12.9.1922 / Rhodesia / Museum.' (BMNH); 1♀, 'S. Rhodesia: / 1926-1929. / H.S. Leeson. / B.M. 1929-466' (BMNH).

Distribution, phenology and biology (Tables 1–2, Fig. 145): Fairly widely distributed, being recorded from Zimbabwe, Malawi, Tanzania and Kenya. Adults have been collected between July and October, the syntypes were collected in January. Cuthbertson's (1939) comments relating to *submaculatus* are here provided under *cuthbertsoni* as material identified as *submaculatus* by Engel, now in ZSMC, has been studied and found to represent this new species.

Similar species: A member of the large and widely distributed group of species possessing a poorly defined facial gibbosity. The hypandrium is distinctively shaped with its rather truncate appearance distally. Some specimens have slight wing spotting similar to that seen in some specimens of *cuthbertsoni* and pale examples of *tomentosus*. This may indicate a close relationship between these species, particularly *submaculatus* and *cuthbertsoni*.

Gonioscelis tomentosus Oldroyd, 1970

Figs 113–115, 145

Gonioscelis tomentosus Oldroyd, 1970: 276–277.

Redescription: Based primarily on holotype ♀ (MRAC).

Head: Antennae both missing [orange with dark red-brown setae in Malawi material]. Facial swelling poorly developed, mystax uniform dark red-brown, a group of 4 small setae located between gibbosity and antennal sockets. Frons and vertex thinly gold pruinose. Ocellar tubercle almost apruinose with black *oc*. Occiput thinly silver-gold pruinose, setae short dark red-brown to black. Proboscis and palpus dark red-brown to black, dark red-brown setose.

Thorax: Dark red-brown, red-gold pruinose, with black apruinose longitudinal stripes on mesonotum. Postpronotal lobes dark red-brown, not contrasting with adjacent mesonotum, with few orange setae. Mesonotal setae black: *ac* not evident; approx. 3–4 weak pairs *dc*, not extending anterior of transverse suture; 2 *npl*; 3 *sa*; 2 *pa*. Scutellum black, silver pruinose, with 2 black *mrg sct*. Wing length 7.6 mm, membrane mostly dark brown, centres of some cells paler. Legs: Femora dark brown, tibiae and tarsi brown-orange, setae mostly black, some minor setae yellow. Prothoracic coxa black, red-gold pruinose, black setose; femoral spur moderately pointed (angle approx. 40°).

Abdomen: Tergites dark red-brown (membranes brown-orange), silver pruinose, setae short dark red-brown. Sternites similar but red-gold pruinose.

Terminalia: Holotype ♀ not dissected. ♂ terminalia (Figs 113–115): Long *ep*, in dorsal view projecting far beyond level attained by proctiger, lobes tapering distally to slightly downturned apex bearing a group of long macrosetae; *gcx* distally with two distal projections and a few long macrosetae; *hyp*, in ventral view, clearly longer than broad, slightly constricted at mid-length and tapering to bilobed apex, lobes equipped with a few short macrosetae and fine setae distally.

Variation: A ♂ from DR Congo, 34 mi. E of Kenge, is most likely to represent the species, described only on females. The ♂ specimens from Malawi and Zambia, while strongly resembling the holotype, show slight differences in male genital morphology (*ep* a little shorter, *hyp* not as deeply bilobed). Specimens from Angola are not as darkly pigmented and have wings exhibiting darker areas associated with forks and crossveins.

The Angola males however agree well with the Kenge specimen as far as genitalia are concerned. For the present I consider all the material listed as belonging to this species.

Type material: DR CONGO: 1♀ **holotype** (seen), 'Holotypus', 'Musée Du Congo / Lulua: Kapanga [? 06°49'S 22°32'E] / viii–1932 / F. G. Overlaet' (MRAC). 1♀ **paratype** (not seen), Katanga, Fokele [?], 29.xi.1911, Dr Bequaert (MRAC).

Type locality: Democratic Republic of Congo: Kapanga.

Other material: ANGOLA: 1♂, 'Angola: / 6mi. NW. of / Sta. Comba Dao [Comba – 08°35'S 15°04'E] / v-30-58, 1250m', 'E.S. Ross & / R.E. Leech / collectors' (CASC); 1♂, 'Angola: / 2mi. N. of / Hengue [10°13'S 13°50'E] / v-29-58, 1550m', 'E.S. Ross & / R.E. Leech / collectors' (CASC); 1♂ 2♀, 'Angola: / 4mi. SW. of / Quilenda [10°33'S 14°22'E] / v-31-58, 900m', 'E.S. Ross & / R.E. Leech / collectors' (CASC); 1♀, 'Angola: / 14mi. NW. of / Cacula [14°33'S 14°04'E] / 1000m. v-25-58', 'E.S. Ross & / R.E. Leech / collectors' (CASC); 3♂, 'Angola: / 19mi. NE. of / Sada Bandeira [Sa Da Bandiera – 14°55'S 13°30'E] / v-21-58, 1650m', 'E.S. Ross & / R.E. Leech / collectors' (CASC; 1♂ NMSA); DR CONGO: 1♂, 'B. Congo: / 34 mi E of / Kenge [04°56'S 17°04'E] / viii-5-1957', 'E.S. Ross & / R.E. Leech / collectors' (CASC). MALAWI: 1♂, 'Malawi / Mjgesse Forest [?] /6200 ft 24 Sept. 1981, J. Bampton'. ZAMBIA: 1♂, 'Zambia / Mafinga Mtns. [09°57'S 33°21'E] / 6300 ft. 20 Sept. 1981 / J. Bampton'. ZIMBABWE: 1♂, 'Mt. Selinda [Mission 20°25'S 32°42'E] / S. Rhodesia / Nov.-Dec. 1930 / R.H.S. Stevenson' (SAMC). UNKNOWN: 1♂, 'Lugawara / 15/8[? - poorly written]/51' (BMNH).

Distribution, phenology and biology (Tables 1–2, Fig. 145): Known from the central African countries of Angola, Zambia, DR Congo and Malawi, and also present in Zimbabwe. While all the Angolan specimens were collected in May, others were collected between August and November/December (no records for October). One specimen appears to have been collected in a forest, it is likely, however, that the species inhabits more open terrain.

Similar species: A member of the large and widely distributed group of species possessing a poorly defined facial gibbosity. The variation seen in this species makes it difficult to assess relationships. Male genital similarities suggest a close relationship with *longulus*.

Gonioscelis truncatus Oldroyd, 1974

Figs 116–118, 149

Gonioscelis truncatus Oldroyd, 1974: 40 (Fig. 29 ♂ gen.).

Redescription: Based primarily on holotype ♂ (NMSA).

Head: Antenna dark red-brown, setae mostly dark red-brown (a few white dorsally). Facial swelling poorly developed, mystax mostly pale yellow-white (a few black on dorsal part of gibbosity). Frons and vertex silver pruinose. Ocellar tubercle silver pruinose with black *oc*. Occiput silver pruinose, slightly weaker behind vertex, setae mostly white (a few black dorsally). Proboscis and palpus dark red-brown, white setose.

Thorax: Dark red-brown, gold-silver pruinose. Postpronotal lobes not contrasting with adjacent mesonotum, with 3–4 yellowish setae. Mesonotal setae: *ac* not evident; approx. 10 pairs *dc*, black, clearly extending anterior of transverse suture; 3 *npl* (2 yellow, 1 black); 3–4 pale yellow *sa*; 4 white *pa*. Scutellum dark red-brown, silver pruinose, with 4 black *mrg sct*. Wing length 7.4 mm, membrane mostly light brown. Legs: Yellow, except anterior face of prothoracic femur, thin strip along anterior face of metathoracic femur, most of hind tibia, all tarsal segments (except for basal part of basitarsus), setae white (few black associated with femoral spur). Prothoracic coxa black, silver pruinose, white setose; femoral spur moderately pointed (angle approx. 50°).

Abdomen: Tergites dark red-brown, gold pruinose, setae short yellow (longer laterally on T1–2). Sternites similar to tergites, setae mostly short.

Terminalia (Figs 116–118): In dorsal view *ep* with lobes and proctiger projecting to about the same level, lobes yellowish proximally dark red-brown distally, lobes hardly tapering distally and somewhat ventrally constricted subapically, apex carries a group of long macrosetae; *gcx* with two distal projections and a few short fine setae; *hyp*, in ventral view, clearly shorter than broad, tapering rapidly to bifurcate apex, distal lobes equipped with fine setae.

Variation: A quite uniform species displaying a little individual variation in the coloration of macrosetae and legs.

Type material: LESOTHO: 1♂ **holotype**, 1♂ 3♀ **paratypes** (seen) 'Roma Mission [29°27'S 27°44'E] / Maseru District / Basutoland / B. & P. Stuckenberg / 4-13 Jan 1963', 'Upper Cave-sandstone level / 600 ft', '*Gonioscelis* / *truncatus* sp.n. / det. H. Oldroyd 1972 / Holotype' [the latter on holotype only – 1♀ paratype has a similar label but with 'Paratypes ?' to indicate that others in the series are also paratypes] (NMSA); 1♂ 4♀ **paratypes** (seen), 'Valley floor / Old Lands / 5500ft.', 'Roma Mission / Maseru District / Basutoland / B. & P. Stuckenberg / 4-13 Jan. 1963' (NMSA); 2♀ **paratypes** (seen), South Africa, Transvaal, Piet Retief [27°00'S 30°48'E], 25.x.1903, R. Crawshay, BM 1903-350 (BMNH).

Type locality: Lesotho: Maseru District, Roma Mission.

Other material: LESOTHO: 2♂, 'National University / of Lesotho / Roma [29°27'S 27°44'E] / G. Kopij 1999-2000'; 1♂, 'Museum Paris / Basoutoland / Leribe [28°53'S 28°03'E] / R. Ellenberger 1923' (MNHN); 1♂, 'Mamathes [29°08'S 27°51'E] / Basutoland / 26.ii.1949 / C. Jacot / Guillarmod' (NMNH); 1♂, 'Mamathes / Basutoland / 1.ii.1948 / C. Jacot / Guillarmod' (NMNH); 1♂ 1♀, 'Mamathes / Basutoland / 31.xii.1947 / C. Jacot / Guillarmod' (NMNH); 1♀, 'Mamathes / Basutoland / 25.xii.1947 / C. Jacot / Guillarmod' (NMNH); 2♀, 'Mamathes / Basutoland / 2-i-1953 / C. Jacot / Guillarmod', 'with prey' [Diptera: Calliphoridae] (AMGS); 1♀, 'Mamathes / Basutoland / 25-xii-1947 / C. Jacot / Guillarmod', 'with prey' [Hymenoptera: Crabronidae] (AMGS); 1♀, 'Mamathes / Basutoland / 1-i-1948 / C. Jacot / Guillarmod', 'with prey' [Hymenoptera: Apidae] (AMGS); 1♀, 'Mamathes / Basutoland / 1-ii-1948 / C. Jacot / Guillarmod', 'with prey' [Hymenoptera: Halictidae] (AMGS); 1♀, 'Mamathes / Basutoland / 12-xii-1954 / C. Jacot / Guillarmod', 'with prey' [Hymenoptera: Crabronidae] (AMGS); 3♂ 2♀, 'Basutoland / Tebetebeng Mill [29°08S:27°48'E] / 13-xii-1964 / J. Jacot-Guillarmod' (AMGS); 1♂ 1♀, 'Mamathes [29°08'S 27°51'E] / Basutoland / 28-i-1951 / C. Jacot / Guillarmod', 'with prey' [Coleoptera: Scarabaeidae] (AMGS); 1♂, 'Basutoland / 16-xii-1964 / D.J. Brothers / Teyateyaneng [29°09'S 27°44'E]' (AMGS); 1♂, 'Basutoland / 13-xii-1964 / D.J. Brothers / Teyateyaneng' (AMGS); 1♂, 'Basutold. / Likhoele [29°48'S 27°17'E] /

Dieterlin' (SAMC). SOUTH AFRICA: 1♂ 4♀, 'South Africa KwaZulu-Natal / Farm Gelykwater rocky / grassland crest of hill / 27°30'38"S: 30°24'52"E / leg. N. Langley 1.xii.1999'; 2♀, 'South Africa ; Natal / Royal Natal National / Park [28°41'S 28°54'E] 6-10.xii.1984 / JGH Londt Riverine / bush Montane slopes'; 1♀, 'Royal Natal 26/10/ 98 / Carex swamp beside / Mahai campsite / S 28°41'17" Alt: 1405m / E 28°56'45"', 'Coll. AP. Leftwich'; 1♂, S. Africa, Natal, Van Reenen [28°22'S 29°23'E], Drakensberg, 1-22.i.1927, RE Turner, 1927-54 (BMNH); 7♂ 14♀, 'South Africa: Natal / Cathedral Peak area / 2829Cc 16-18.xii.1977 / JGH Londt ex Malaise'; 3♂ 2♀, 'South Africa: Natal / Cathedral Peak area / xii. 26-27 1977. 2829CC / R.M. Miller. Indigenous / for., Malaise trap'; 4♂ 3♀, 'S. Africa. Natal / 2.5km S. Ukahlamba / Res. Station. Grassy margin, / path to weir. 2829cc / 21 Dec. 1979. B. Lamoral.'; 1♂, 'Capturing Melolonthinae –Sericinae / on *Protea caffra* leaf / Tryme Hill; plot No. 5, 1580m / Cathedral Peak area / Natal Drakensberg 139c/11 / Natal South Africa / Pajor, Istvan: 01/12/1989'; 2♂, 'South Africa: Natal / Cathedral Peak : / Indumeni gorge 2829CC / 14-18.xi.1982 / D. A. Barraclough'; 1♀, 'S. Africa. Natal / Cathedral Peak Indumeni / Gorge. Grassland, Protea / Slope 19 Dec. 1979 / B. Lamoral'; 1♂ 1♀, 'R.S.A.: KZ-Natl #55 / Lekkerwater Farm / 28°59'S 29°24'E 1620m / Date: 19.xii.1996 / Coll: J.G.H. Londt'; 1♂, 'M'fongosi [28°42'S 30°48'E] / Zulu L. / WE Jones' ~ 'Dec. 1914' (SAMC); 1♂ 1♀, 'South Africa: Natal / Injasuti Nature Res. / 2929AB 5-11.xii.1983 / Coll: J.G.H. Londt / at M/V light trap.'; 1♀, 'South Africa: Natal / Drakensberg area / Injasuti / P E Reavell 14.i.82 / Delmhlwaziwe / River', 'Boulder / bed scrub'; 1♀, 'R.S.A.: KZ-Natl #115 / Monks Cowl Nature Res. / 29°03'S 29°24'E 1440m / Date: 10.xii.1995 / Coll: J.G.H. Londt / Stream & Forest edges'; 1♂, 'South Africa: Natal / Drakensberg area / Giant's Castle [29°20'S 29°29'E] / P E Reavell 17.i.82 / Bushman's R', 'Submontane / grassveld / 7000m [sic]'; 1♀, 'South Africa: Natal / Drakensberg area / Giant's Castle / P E Reavell 15.i.82', 'Submontane / grassveld'; 2♀, 'South Africa: Natal / Garden Castle Nat Res / Hotel area ca 1800m / 29°45'S 29°15'E / JGH Londt 6-11.i.1988 / Grassveld near stream'; 2♂ 1♀, 'South Africa: Natal / Bulwer Mountain / 2.xii.1986 SE2929DC / J. G. H. Londt / Proteas/Grassveld'; 1♀, 'South Africa: Natal / Coleford Nat. Res. / 1500m 29°59'S 29°28'E / Date 27 Nov 1986 / Coll. P.M.C. Croeser'; 1♂, 'Karkloof falls [29°24'S 30°16'E] / Natal 6.xi.60 / T. Schofield'; 1♂, 'S Africa: E. Cape #7 / 5km W of Rhodes / 30°49'S 27°55'E 1800m / Date: 5.ii.1992 Natal / Museum Expedition / grassland & ravine'; 1♂ 6♀, 'South Africa: Cape. / Rhodes area 3027DD / J. Londt + B. Stuckenberg / 9-10.i.1979 Banks of / river + hill near town'.

Notes: Oldroyd (1974) states '10 paratypes from the same locality' as holotype (Roma Mission, Lesotho) and lists 'Piet Retief' as the only other locality. He gives no details of gender or repository for paratypes. There are only nine paratypes with essentially similar label data as the holotype – assuming that Oldroyd saw the material with slightly different label data ('Valley floor Old lands') collected over the same period as those from 'Upper Cave-sandstone level' and included these in the type series. The 2♀ from Piet Retief, listed at the time of description, are considered paratypes by BMNH staff. This is accepted, so there are actually 11 paratypes in all. Oldroyd (1980) incorrectly gives Botswana as the country of the type locality. This may be explained by a common confusion between the older names of Bechuanaland (now Botswana) and Basutoland (now Lesotho).

Distribution, phenology and biology (Tables 1–2, Fig. 149): A species associated with high altitude Grassland situations in and around the Drakensberg mountains of Lesotho and South Africa. Adults are active during the warmer summer months of October through to February when this area normally receives its rainfall. Specimens are commonly found resting on grass stalks in montane meadows. There are five Natal Museum prey records as follows: 1♂ 4♀ (Cathedral Peak 1; Rhodes area 1; Lekkerwater farm 1; Monks Cowl 1; Injasuti 1) – Coleoptera (Scarabaeidae 2), Hymenoptera (Colletidae 1, Formicidae 1, Tiphiidae 1). In addition there are six prey records for Lesotho material in AMGS listed above.

Similar species: A member of the large and widely distributed group of species possessing a poorly defined facial gibbosity. The species is similar to *ventralis* in the bilobed hypandrium and downturned apandrial lobes, but is otherwise distinctive.

Gonioscelis ventralis Schiner, 1867
Figs 1, 6, 119–133, 147

Gonioscelis ventralis Schiner, 1867: 363–364; Hull 1962: 131–132 (Fig. 1710 ♂ gen.); Oldroyd 1974: 42.
Gonioscelis femoralis Ricardo, 1925: 266–267; Hull 1962: 131–132 (Figs 137 antenna, 451 wing, 916 & 925 head, 1911 ♀ gen.) **syn. n.**
Gonioscelis rufescens Ricardo, 1925: 268 **syn. n.**
Gonioscelis maculipennis Engel, 1925: 169–170 (Fig. 5♂ gen) **syn. n.**

Redescription: Based primarily on holotype ♂ (NHMW).

Head: Antennal scape and pedicel orange-brown, postpedicel dark red-brown, setae mostly yellow, longer ones light brown. Facial swelling poorly developed, a second smaller protuberance between main gibbosity and antennal sockets, mystax uniform pale yellow, in two groups associated with facial swellings. Frons and vertex thinly gold pruinose. Ocellar tubercle apruinose with brown-yellow *oc*. Occiput gold-silver pruinose except for two apruinose areas behind vertex, setae pale yellow. Proboscis and palpus dark red-brown, with fine pale yellow setae.

Thorax: Brown-orange with three dark red-brown areas on mesonotum, thinly gold pruinose (2 apruinose areas posteriorly). Postpronotal lobes not contrasting in colour with adjacent mesonotum, with many pale yellow setae. Mesonotal setae yellow: *ac* not evident; approx. 4 pairs *dc*, not extending anterior of transverse suture; 3 *npl*; 3 *sa*; 3–4 *pa*. Scutellum brown-orange, with 8 fine yellow *mrg sct*. Wing length 6.3 mm, membrane mostly yellow, most cells centrally yellow-brown (Fig. 6). Legs: Uniform brown yellow, setae mostly pale yellow dorsally, but many black setae ventrally. Prothoracic coxa brown-orange, silver pruinose, yellow setose; femoral spur bluntly pointed (angle approx. 75°).

Abdomen: Tergites dark red-brown, brown-orange laterally, gold pruinose (with some bare areas), yellow setose. Sternites orange, apruinose except for tiny patches medially placed on hind margins, yellow setose.

Terminalia (Figs 119–121): In dorsal view *ep* shorter than proctiger, epandrial lobes hardly tapering distally and with sharply downturned short tips, apical part before downturned tip bearing long setae; *gcx* with three distal projections and a few short fine setae, ventral lobe thumb-like and equipped with few setae; *hyp*, in ventral view, clearly shorter than broad, tapering rapidly to mid-length before terminating in two somewhat truncated diverging setose apical lobes.

Variation: A species showing a fair degree of individual and geographic variation. Of particular note is the variation seen in the shapes of gonocoxal projections and the arrangement of gonocoxal setae. The decision to synonymise *femoralis*, *rufescens* and *maculipennis* has been largely made as a result of an inability to clearly define their differences within the wide range of variation that can be seen (Figs 122–133).

Type material: SOUTH AFRICA: 1♂ **holotype** (*ventralis* seen), 'Cap', '*ventralis* Sch / Coll. Winthem', 'Type' (red) (NHMW); 1♂ **syntype** (*femoralis* seen), Cape Province, Cradock [32°11'S 25°37'E], iv.1914, Miss Brinker, BM 1914-177 (BMNH); 2♀ **syntypes** (*femoralis* seen), South Africa, Natal, Willow Grange [Willowgrange – 29°03'S 29°57'E], Mooi River, R.C. Wroughton, BM 1923-58, 7.xii.1913 & 13.xii.1913 (BMNH); 1♂ **holotype** (*maculipennis* seen), 'Algoa bay [= Port Elizabeth – 33°58'S 25°35'E] / Capland / Dr. Brauns / 11 10 96', 'Type von / *maculipennis* / Engel / 1925' (ZSMC); 1♂ **paratype** (*maculipennis* seen), 'Algoa-Bay / Capland / Dr. H. Brauns / 20 12 96', 'Sammlung / F. Hermann', '*Gonioscelis* / *maculipennis* / Herm.', '*Gonioscelis* / *maculipennis* / Eng. / det. E.O. Engel ♂' (ZSMC); ♂ ♀ **paratypes** (*maculipennis* not seen), Capland, Krebs (ZMHB); 2♂ 1♀ **syntypes** (*rufescens* seen), Zimbabwe [S.Rhodesia], Bulawayo [20°09'S 28°35'E], 21.xii.1919 [1♂ 1♀] 10.xi.1920 [1♂], Rhodesia Museum (BMNH).

Type locality: 'Afrika' was cited as the only information known about the type locality. The specimen is however clearly labelled 'Cap' (= Cape). I here designate the type locality as South Africa: Eastern Cape Province, Dias Memorial area near Bokness, as the male known from this locality perhaps most closely resembles the holotype.

Other material: BOTSWANA: 1♂, 'Botswana (B1) / 42 mls W. / Kalkfontein [22°07'S 20°54'E] / 11-12.iv.1972', 'Southern / African Exp. / B.M. 1972-1', 'at / light' (BMNH); 1♂ 1♀ , 'Botswana / 50 km NNW / of Serowe / Forchhammer / 2226BA 19-xi-84 / Bush day'; 1♂, 'Day / Serowe, Botswana / Forchhammer Leg. / Date 27-12/82 / J.No.'; 2♀ , 'Day / Serowe, Botswana / Forchhammer Leg. / Date 18-11/82 / J.No.'; 1♂, 'Malaise trap 1 / Botswana SE2226BD / Farmers Brigade 5km / SE of Serowe Hillside / N slope P. Forchhammer / 30.xi.1983'; 1♂, 'Botswana SE2226BD / Farmers Brigade 5km / SE of Serowe Hillside / N slope P. Forchhammer / Malaise trap 3.xii.1985'; 1♂, 'Botswana SE2226BD / Farmers Brigade 5km / SE of Serowe Hillside / N slope P. Forchhammer / Malaise trap 3. i.1986'; 1♂, 'Botswana SE2226BD / Farmers Brigade 5km / SE of Serowe Hillside / N slope P. Forchhammer / Malaise trap 3 / v-86'; 1♀ , '110km S Francistown / Botswana / 22°03'S 27°16'E / 21.i.1978 / Holm, Jacobs, Kirsten, Scholtz'; 1♂ 1♀ , 'Botswana / Mochudi / Kgatleng District / SE 2426Ac', '19-21 Apr. 1982 / S. Louw'. MOZAMBIQUE: 1♂, 'Mapulanguene [24°29'S 32°05'E] / 6-12-60', 'Insecta / Det. Travassos Dias'; 1♀ , 'Mapulanguene / 3-12-60'; 1♀ , 'Sabié [25°19'S 32°15'E] / 17/9/1953 / Col. T. Dias'; 8♂ 9♀ , 'Chiqubo [? = Chiquembo – 21°26'S 33°54'E], Mozam. / No. / 11-20,ii-1964 / Coll. A.L. Moore (NMNH). NAMIBIA: 1♂, 'Otjimbumbe [17°24'S 14°25'E] / Kunene R. / Mar. 1923' ~ 'S.W. Africa / Mus. Exped.' (SAMC); 1♂ 1♀ , 'Katima Mulilo [Katima Molilo – 17°30'S 24°16'E] / E Caprivi / 20-28.x.1970 / A. Strydom'; 1♂, 'S.W. Africa (W41) / Tsumeb [19°14'S 17°43'E] / 17.ii.1972', 'Southern / African Exp. / B.M. 1972-1' (BMNH); 1♂, 'SWA / Outjo [20°07':16°09'E] / IRC / 1916DA / 10.iii.79 / VB Whitehead' (SAMC); 2♂, 'S.W. Africa (W36) / Otjikoko Süd Fm., / 33 mls. ENE. / Omaruru [21°26'S 15°56'E] / 10-13.ii.1972', 'Southern / African

Exp. / B.M. 1972-1' (BMNH); 1♂ 1♀, S.W. Protect. / Narugas [? = Narudas 27°22'S 18°51'E]' ~ 'R. Lightfoot / Jan. 1919' (SAMC); 1♂ 1♀, 'SWA / Alkmar [21°52'S 19°52'E] / 3.iii.82 / V.B. Whitehead' (SAMC); SOUTH AFRICA: 2♂ 2♀, 'Sth Africa: Transvaal / 6km N of Vivo 2229CC / 23-24.ii.1980 Londt / & Schoeman Bushveld / veget. & old lands'; 2♂, 'S Africa: Transvaal / Beacon Ranch 20km / NW Gravelotte [23°57'S 30°37'E] / 17.xi.1978 / Brothers & J-Guillarmod'; 1♀, 'South Africa 2427CB / Transvaal Thabazimbi / 1.ii.1978 JGH. Londt / Bushveld with long / open areas of grass'; 1♂, 'Rooiberg [24°46'S 27°44'E] / Transvaal / xii.1958' (BMNH); 3♀, 'South Africa 2427DD / Transvaal 15km E of / Rooiberg 1.ii.1978 / JGH Londt Grassveld'; 1♂ 1♀, 'South Africa / Transvaal / S.W. Waterberg Dist. [24°00'S 28°00'E] / 31.i.1928 / Prof. J.C. Faure' (ID *G. faurei* sp. n. by Bromley 1945 – unpublished) (NMNH); 1♂, 'South Africa: Doorndraad / 24°40'S 28°46'E / 23 iv 1988 M. Prinsloo / Department of Entomology / University of Pretoria'; 1♂, 'South Africa / Trsvl., 5 mi. W. / Warmbad [24°53'S 28°17'E] / 24-25 Feb. 1968 / Spangler' (NMNH); 1♀, 'RSA Transvaal / Chuniespoort [24°12'S 29°30'E] / 1.iv.1979 / L. Schoeman'; 1♀, 'South Africa 2429AC / Transvaal 10km SE / Potgietersrus on rd / to Zebediela 24-7.i / 1978 JGH Londt / Bushveld'; 9♂ 9♀, 'South Africa: Limpopo / Sondela Nature Reserve / 24°54.127'S 028°25.191'E / 7-14.xi.2003 J.G.H. Londt / 1086m Acacia savannah / Sweep-net & Malaise trap'; 5♂ 3♀, 'South Africa 2429CC / Transvaal Elands / River N Marble Hall / 24.i.1978 JGH Londt / Grassveld nr. River'; 1♂, 'Sth Africa: Transvaal / Abel Erasmus Pass / 2430BC 26.ii.1980 / J. Londt & L. Schoeman / Bushveld near summit'; 1♂, 'Skukuza [24°59'S 31°36'E] / Kruger N.P. / leg. Zumpt, ii.69' (BMNH); 5♂ 5♀, 'S Africa: NW Province / Molopo Game Reserve / 25°52'36"S:22°53'58"E / 990m 13.iii.2003 J Londt / *Acacia*, *Ziziphus* savanna' (1♂ 1♀ CASC); 4♂ 6♀, 'S Africa: NW Province / Molopo Game Reserve / Phiri Camp area / 25°46'43"S:22°55'53"E / 990m 14.iii.2003 J Londt / *Acacia Erogrostis* savanna'; 1♂ 1♀, 'S Africa: NW Province / Molopo Game Reserve / Phiri Camp area / 25°46'43"S:22°55'53"E / 990m 15.iii.2003 J Londt / *Acacia Erogrostis* savanna'; 1♂ 4♀, 'S Africa: NW Province / Molopo Game Reserve / Motopi Camp area / 25°50'55"S:22°55'45"E / 1020m 14.iii.2003 J Londt / Dry *Acacia* savanna'; 3♀, 'S Africa: NW Province / Molopo Game Reserve / Phephane River area / 25°47'26"S:22°51'08"E / 990m 15.iii.2003 J Londt / *Acacia, Grewia* savanna'; 2♂ 5♀, 'S Africa: NW Province / Vorstershoop (outskirts) / 25°50'08"S:23°01'28"E / 990m 15.iii.2003 J Londt / *Erogrostis Schmidtia* verge'; 1♂ 1♀ 1?, S. Afr. C.P. / Tosca / 2523Dd / 26.ii.80 / Whitehead' (SAMC); 1♀, 'S Africa: NW Province / Botsalano Game Reserve / Dam near Gate 2 1380m / 25°32'05"S:25°41'31"E / 18.iii.2003 J Londt *Rhus* / *Acacia* mixed savanna'; 1♀, 'Boekenhoudskloof, SA / (30km NE Pretoria [2528CB]) / 7.xii.77 / G. Bernon'; 1♀, 'South Africa / Pretoria [25°39'S 28°09'E] / 31-12-1965 / J. D. Mohr'; 1♂, 'S Africa: NW Province / Leon Taljaard Nature Reserve / 26°55'32"S:24°41'55"E / 1230m 13.iii.2003 J Londt / *Acacia Erogrostis* savanna'; 1♂, 'Suid-Africa / Potch [Potchefstroom – 26°43'S 27°06'E] / 13-1-1943 / H. P. V. Heerden'; 1♂, 'Pongolo R. [26°51'S 32°20'E] / Oct. 1929 / Marley'; 1♀, 'South Africa: Natal / Ndumu Game Reserve / Rest Camp 2632Cd 85m / 15 Feb. 1978 Malaise / Brothers & Bampton'' 1♀, 'Ndumu Game / Reserve / N.E. Zululand / Jan 1964'; 1♂ 3♀, 'S Africa: N Cape #14 / 20km N of Hotazel / 27 07:'S 22 59' [sic] 1050m / Date: 14.iii.1991 / Whittington & Londt / Kuruman River banks'; 1♀, 'S Africa: Cape Prov / Hotazel / 2.iii.1989 / 27°10'S 22°55'E / L. E.

Schoeman'; 1♂, 'S Africa: N Cape #15 / 14km S of Hotazel / 27 19'S 22 54'E 1050m / Date: 14.iii.1991 / Londt & Whittington / Ga-Mogara River bed'; 1♂, 'S Africa: N Cape #17 / 3km E Olifantshoek / 27 55'S 22 45'E 1250m / Date: 15.iii.1991 / Londt & Whittington / Open Acacia grassland'; 1♀, 'S Africa: N Cape #19 / 8km W Olifantshoek / 27 56'S 22 40'E 1550m / Date: 15.iii.1991 / Londt & Whittington / Flat grassy plain'; 1♂, 'Sth Africa Cape Prov / Ca. 5km W of Hotazel / 2722BB 23.iii.1982 / J. Londt & L. Schoeman / Acacias/Grass/Shrubs'; 4♀, 'Sth Africa Cape Prov / Hill nr Olifantshoek / 2722DC 24.iii.1982 / J. Londt & L. Schoeman / Rocky hillside grass / & Acacia trees'; 2♂ 3♀, 'Sth Africa Cape Prov / 45km SW of Kuruman / 2723CA 24.iii.1982 / J. Londt & L. Schoeman / Acacia Woodland area'; 9♂ 5♀, 'Sth Africa Cape Prov / 50km SW of Kuruman / 2723CA 24.iii.1982 / J. Londt & L. Schoeman / Acacia woodland area'; 1♀, 'Sth Africa Cape Prov / 30km SW of Kuruman / 2723DA 24.iii.1982 / J. Londt & L. Schoeman / Sandy area/few shrubs'; 1♂, 'Taungs [= Taung 27°32'S 24°48'E] / Griqualand / West' ~ 'Mus Staff / Oct. 1939' (SAMC); 1♀, 'South Africa: Natal Prov / Zululand, 20mi. S. Ndumu / Game Res. Camp. (2732Aa) / Nov. 29. 1971; ME & BJ Irwin / dry scrub forest; 320ft'; 1♂, 'South Africa, Natal / Zululand, 40km N / Jozini, 25-x-1972 / M. E. Irwin 2732Ac'; 5♀, 'South Africa, Natal Prov / 20 mi. N Jozini (2732Ac) / Nov. 28, 1971 ME&BJ Irwin / dry hillside; 750ft.el.'; 1♂, 'South Africa: Natal / Mseleni 29.xi.1982 / 2732BC Stuckenberg / Barraclough & Londt / Woodland/ sandy area'; 1♂ 1♀, 'South Africa: N Cape / Witsand Nature Reserve / ca. 28°33'45"S:22°28'40"E / 1200m 5.iii.2001 / J.G.H. Londt Red sand / *Acacia* grassland area'; 2♀, 'South Africa: N Cape / Witsand Nature Reserve / ca. 28°32'15"S:22°30'30"E / 1200m 6.iii.2001 / J.G.H. Londt Red sand / *Acacia/Grewia* grassland'; 2♀, 'South Africa: N Cape / Witsand Nature Reserve / 28°34'49"S:22°28'43"E / 1200m 6.iii.2001 / J.G.H. Londt Red sand / *Acacia/Ziziphus* grassland'; 3♂ 2♀, 'Sth Africa Cape Prov / Padkloof Pass ca 20kn / S Witsand. Dry river / course Grass / Acacias / 2822DA 17.iii.1982 / J. Londt & L. Schoeman'; 4♀, 'South Africa: N Cape / Vaalbos National Park / Bokdam Camp area 1150m / 28°34.394'S 024°17.698'E / 28-29.i.2004 JGH Londt & / T Dikow *Acacia* savanna'; 2♀, 'South Africa: N Cape / Vaalbos National Park / Mekala Rest Camp 1070m / 28°28.654'S 024°18.911'E / 28-29.i.2004 JGH Londt & / T Dikow *Acacia* savanna'; 1♀, 'South Africa: N Cape / Vaalbos National Park / Riverside Picnic site 1055m / 28°27.470'S 024°19.994'E / 28-29.i.2004 JGH Londt & / T Dikow *Acacia* savanna'; 1♀, 'Sth Africa Cape Prov / 60km W of Kimberley / 2824CA 25.iii.1982 / J. Londt & L. Schoeman / Acacias/grass/sand'; 5♀, 'Sth Africa Cape Prov / 35km W of Kimberley / 2824CB 17.iii.1982 / J. Londt & L. Schoeman / Acacias/ grass/sand'; 2♂ 2♀, 'Kimb. [Kimberley – 28°44'S 24°46'E] / 10/96 [x.1896]'; 1♂, 'Kimb. / ♂ in cop / 3/10/96'; 2♂ 1♀, 'Kimb. / 11/96 [xi.1896]'; 1♀, 'RJ Power / Kimberley, C.P.' (AMGS); 7♂ 6♀, 'Modder Riv / Brandfort [28°42'S 26°28'E] / OFS' ~ 'Mus Staff / Nov. 1939' (SAMC); 1♂ 6♀, 'South Africa: Natal / Colenso 2829DB / 7.x.1981 / J.G.H. Londt'; 3♂ 3♀, 'South Africa: Natal / Weenen Nature Reserve / 28°51'S 29°59'E / grassland, Umtunzini / 1-3.x.1990, sweepnet / A. E. Whittington'; 1♀, 'R.S.A.: KZ-Natal #20 / Mpati Mountain Dundee / 28°08'S 30°13'E 1590m / Date: 19.iii.1997 / Coll: J.G.H. Londt / Summit grass & bush'; 1♀, 'South Africa: Natal / 20km W Tugela Ferry / 26-27.ii.1977 2830CA / Raymond M. Miller / Malaise trap'; 1♂, 'South Africa: Natal / 4km N Tugela Ferry / 19.ii.1979 2830CB / J.G.H. Londt Trees / & Grass near stream'; 1♂, 'South Africa, Natal / 2830Cc, Weenen / Mooiplaats, 21.xi.1986 / A/E. Whittington'; 1♀, 'South Africa: Natal #1 G/ Weenen Nat. Reserve / 28°50'S 30°10'E m / Date: 30.ix.1990 / Coll: R.M. Miller'; 1♀, 'Nyala Game / Reserve [28°40'S 31°45'E] / 12.xi.89 / Grass & Thorn' ~ 'Veld / 20km inland / Empangeni'; 1♂, 'S Africa: N Cape #30 / 64km SW of Douglas / 29 23'S 23 20'E 1070m / Date: 19.iii.1991 / Whittington & Londt / Open grassland'; 1♂, 'South Africa: Natal / Estcourt [29°00'S 29°53'E] / Date: 13.xi.1986 / Coll: L. E. Schoeman'; 1♂ 2♀, 'Estcourt / 1896'; 1♀, 'Estcourt / 11/96'; 1♂, 'Estcourt, / Natal. / Sept. & Oct. 1896. / G.A.K. Marshall. / 1903-17.' (BMNH); 1♀, 'Pres. by / Imp. Bur. Ent. / Brit. Mus. / 1923-58.', 'Natal / Willow Grange / Mooi River / 13.xii.13. / R.C. Wroughton' [same data as *femoralis* syntypes] (BMNH); 1♀, 'Mhlopeni Ranch [29°00'S 30°25'E] / Natal / 12-14/11/1990 / F.L. Farquharson'; 1M 7♀, 'South Africa: Natal / Mhlopeni Nature Res. / 15km SE Muden 2930AB / Coll: J.G.H. Londt / Date: 22.xii.1983'; 1♂, 'South Africa: Natal / Ukulinga / Pietermaritzburg [29°37'S 30°23'E] / Date: 2.x.1983 / Coll: A. Freidberg'; 1♀, 'So. Africa: Univ. Natal, / Ukulinga Res. Frm. 10km / SE Pietermaritzburg [2930CB] / 16-31.10.1986 grassland / RM Miller dam margin / malaise trap'; 1♂, 'Matatiele [30°20'S 28°48'E] / CP 11.11.54', 'S, Africa: / Cape Province. / 11.ix.1954. / C.H. Andrewes.' (BMNH); 1♀, 'Matatiele / CP 10.11.54', 'S, Africa: / Cape Province. / 10.ix.1954. / C.H. Andrewes.' (BMNH); 1♂, 'South Africa: Natal Prov / Richmond Dist. Pateni / 30°09'E, 29°56'S (2930Cc) / Nov. 18, 1971; temp. forest / BR Stuckenberg & ME Irwin'; 1♀, 'South Africa: Natal / Josephines Bridge / 3030AA / Date: 20.xii.1984 / Coll: J.G.H. Londt'; 1♀, 'South Africa, Cape / 16mi. E. of Cradock / Farm "Who can tell" / March 11, 1972, 1000m / ME & BJ Irwin, 3225Bb'; 5♂ 4♀, 'Cookhouse [32°45'S 25°49'E] / Eastern Cape' ~ SA Museum / March, 1954' (SAMC); 1♂ 1♀, 'Zuurbergen [Suurberg Mountains 33°15'S 25°34'E] / Eastern / Cape' ~ 'S.A. Museum / March., 1954' (SAMC); 1♂ 1♀, 'Uniondale [33°39'S 23°08'E] / Capland / Dr Brauns / 25.12.09', '*Gonioscelis / maculipennis* / det. Engel' [ID on ♀ only]; 1♂ 1♀, 'Sth Africa: Cape Prov / Louterwater 3323DC / 13.xii.1979 J. Londt / B. Stuckenberg grass / & hillside macchia'; 4♂ 3♀, 'Patiente [Patensie 33°46'S 24°49'E] / Humansdorp / S.A. Museum' ~ 'Mus. Staff / Oct. 1938' (SAMC); 2♂ 4♀, 'Papiesfontein [3324DD] / Gamtoos Mth.' 6 'S.A.M. / 1:60' (SAMC); 1♂, 'Otterford Forestry / Reserve / Hankey area / 1-10.12.67 3325CC / B & P Stuckenberg'; 2♂, 'Groendal / Uitenhage [33°46'S 25°24'E] / SA Museum' ~ 'Mus. Staff / Oct. 1938' (SAMC); 5♀, 'Loerie [33°52'S 25°02'E] / ECP' ~ 'S.A.M. / 1: 60' (SAMC); 1♂, 'Algoa-Bay [= Port Elizabeth – 33°58'S 25°35'E] / Capland / Dr. H. Brauns / 5 12 96', '*G. / maculipennis* / Herm. / det. Engel', '*Gonioscelis / maculipennis* / Eng.' (ZSMC); 1♀, 'Walmer / Port Elizabeth [33°58'S 25°35'E] / ECP' ~ 'F.W. Gess / S.A.M. / Jan. 1960' (SAMC); 1♀, 'Port Elizabeth / 3.12.60 / B.S. Brunhuber' (AMGS); 1♂, 'Cape Province / Grahamstown [33°18'S 26°32'E] / 7.i.1978 / J. G. H. Londt'; 1♀, 'Cape Province / Grahamstown / 17.ii.1971 / J. G. H. Londt'; 1♂, 'Grahamstown / E.C.P. [Eastern Cape Province] / S. Africa / 19.iii.55. / D.J. Greathead' (BMNH); 1♂ 1♀, 'Grahamstown / E.C.P. / S. Africa / 6.iii.55', 'D.J. Greathead' (BMNH); 1♂, 'Grahamstown / E.C.P. / S. Africa / 27.iii.55. / D.J. Greathead', '*Gonioscelis* / det. H. Oldroyd' (BMNH); 1♂ 1♀, 'Grah. Town [Grahamstown] / K.H. Munro / 22.3.21' (SAMC); 1♂ 2♀, 'Cape Province / Vlakwater [33°09'S 26°19'E] / Grahamstown / 21-xi-1981 / D.W. Gess' (AMGS); 1♀, 'Cape Province / Vlakwater / Grahamstown / 16-xi-1987 / F.W. Gess' (AMGS); 3♂ 2♀, 'Cape Province / Hilton [33°15'S 26°21'E] /Grahamstown / 9.iii.1978 / F.W. Gess' (AMGS); 1♂ 1♀, 'Cape

Province / Hilton /Grahamstown / 17.iii.1978 / F.W. Gess' (AMGS); 2♀, 'Cape Province / Hilton /Grahamstown / 21.iii.1978 / F.W. Gess' [1♀ – with prey Coleoptera: Scarabaeidae] (AMGS); 1♂, 'Cape Province / Hilton /Grahamstown / 5.iv.1978 / F.W. Gess' (AMGS); 1♀, 'Cape Province / Hilton /Grahamstown / 13.i.1978 / D.W. Gess', 'Sandpit' (AMGS); 2♀, 'Cape Province / Hilton /Grahamstown / 14.ii.1978 / S.K. Gess' (AMGS); 2♂ 1♀, 'Cape Province / Strowan [33°18'S 26°28'E] /Grahamstown / 16-i-1969 / F.W. Gess' (AMGS); 3♀, 'Cape Province / Strowan /Grahamstown / 8-i-1969 / F.W. Gess' (AMGS); 1♂, 'Cape Province / Strowan /Grahamstown / 18-ii-1969 / F.W. Gess' (AMGS); 3♀, 'Cape Province / Strowan /Grahamstown / 3-iii-1969 / F.W. Gess' (AMGS); 1♂, 'Cape Province / Strowan /Grahamstown / 22-i-1969 / F.W. Gess' (AMGS); 1♀, 'Cape Province / Strowan /Grahamstown / 30-iii-1969 / C. Jacot-Guillarmod' (AMGS); 1♂, 'S Africa: Cape #7 / 6km E of Alicedale / 33°19'S 26°07'E 600m / Date: 21.xi.1990 / Whittington & Londt / New Years Dam area'; 1♀, 'South Africa, Cape Province / Port Alfred 16.i.1982 / (33°36'S 26°58'E) R.F. Lawrence / + P.M.C. Croeser'; 4♂ 2♀, 'Boesmans Riv. [Boesmansriviermond 33°42'S 26°40'E] / nr. Grahamstown / E. Cape' ~ 'S.A. Museum / March., 1954.' (SAMC); 1♂, 'Sth Africa Cape Prov / Dias Memorial area / near Bokness 3326DA / 25.i.1984 D. & C. / Barraclough. Coastal / forest margins'; 1♀, 'Dr. Brauns / Capland', '*G. / maculipennis* / Herm. / det. Engel' (ZSMC). ZIMBABWE: 1♂ 1♀, 'Rhodesia / Salisbury [17°49'S 30°02'E] / A. Watsham'; 1♂ 1♀, 'Salisbury / Feb/15' (SAMC); 1♂, 'Salisbury / 23/12/ 11' (SAMC); 3♂ 3♀, 'Dr Melle / Arcturus. 1916 / Salisbury' (SAMC); 1♂, 'Sawmills [19°35'S 28°02'E] / S. Rhodesia / 14.xi.1924 / R.H.R. Stevenson'; 1♂, 'Sawmills / S. Rhodesia / 10.ii.1923 / Swinburne & / Stevenson'; 1♀, 'Pres. by / Imp. Bur. Ent. / Brit. Mus. / 1928-347.', '*Gonioscelis / ventralis* / Schin. / Dr E O. Engel det.', 'Sawmills / S. Rhodesia / 22-2-1925 / Rhod. Museum' (BMNH); 1♀, 'Bulawayo [20°09'S 28°35'E] / 30.4.1923 / R. Stevenson'; 1♂, 'Bulawayo / S. Rhodesia / 16.i.1927 / R.H.R. Stevenson', '*Gonioscelis / ventralis* / Schin. / Dr. E.O. Engel det.' [recorded by Engel (1929)]; 1♂ 1♀, 'Zimbabwe / Shabani 20°20'S / 30°02'E Jan. 1981 / Mr P. Fox'; 1♂, 'Chipinda Pools Area / Tsetse Fly Ops. / S. Rhodesia / Ndanga [reserve 20°25'S 31°25'E] / R.G. 10.xii.1939 / Lundi R.', 'Pres. by / R. Goodier. / B.M. 1961-72.' (BMNH); 1♂, 'S. Rhodesia / Mt. Silinda [mission 20°25'S 32°42'E] 10.ii.60. / R. Goodier 1138', 'Pres. by / R. Goodier. / B.M. 1961-72.' (BMNH); 1♂, '7.iii.14 / Lon?ey [illegible letter – unknown locality] / Rhodesia / H Swale' (SAMC).

Recorded material not studied: Ricardo (1925) mentions a ♀ from Tsumeb (Namibia) sent for study by Peringuey (then at SAMC), and 1♂ 1♀ from Saw Mills (Zimbabwe). The whereabouts of this material is not known. Engel (1929) records under *ventralis* '♀, Saw Mills, S. Rhodesia; 27.xii.23; Rhodesia Mus.; Imperial Bureau of Entom.' I have not traced this specimen. Oldroyd (1970) provisionally recorded *maculipennis* from Tanzania 'Albertville, 1♀, 1-20.ii.1919 (R. Mayné) (MRAC)' – it is highly unlikely that his identification was correct.

Notes: As far as synonymies are concerned the following should be noted: 1. *G. femoralis* and *rufescens*: Ricardo's (1925) species fall within my concept of *ventralis* and so are synonymised. 2. *G. maculipennis*: Engel (1925: 167–168) was apparently unable to identify *ventralis*. His description and illustration (his Fig. 2) of Waterberg material listed as *ventralis* agree well with *ramphis*, his Lichtenburg female is *mantis*, while material from Ethiopia and Kenya belong to *macquartii*. His description and illustration of the male genitalia of *maculipennis* (his Fig. 5), however, accurately depicts the condition seen in the holotype of *ventralis*, evidence supporting the proposed synonymy. Hull's (1962) illustration of *ventralis*, apart from being upside-down, is poor in that little detail is given and the shapes of structures do not agree particularly well with the holotype. Ricardo (1925) designated more than one type for both *femoralis* and *rufescens*, so all her specimens must be regarded as syntypes. As Engel (1925) listed his *maculipennis* 'Type' separately from his 'Cotypen' I accept it as a holotype and the cotypes as paratypes. The fact that he attributes *maculipennis* to 'Hermann i. litt.' is of no consequence as no credit can be attributed to Hermann in terms of the International Code for Zoological Nomenclature. Oldroyd (1974) records *ventralis* from 'Ndumu Reserve and Nohlangosi' (South Africa), 'Mahalapye, (Schofield), Botswana, and '?Rhodesia'. This material, except for the '?Rhodesia' record, is now referred to other species – see *ramphis* (Nohlangosi = Mohlangasi and Mahalapye records) and *zulu* (Ndumu record).

Distribution, phenology and biology (Tables 1–2, Fig. 147): The most widespread of southern African species. It is found in Grassland/Savanna situations over much of the central and eastern parts of southern Africa (an area of summer rainfall) – from Zimbabwe, Botswana and Namibia in the north to the southernmost parts of the Eastern Cape province of South Africa. Adults have been collected almost all year round except for the winter months of June, July and August. Personal experience and label data suggest that individuals are usually found on the ground or on low vegetation. Cuthbertson (1935), using the name *maculipennis*, published the following comment on the species in Zimbabwe – 'Recorded by Engel (1929) … from Bulawayo and Sawmills (Matabeleland), and is known to me from the Mazoe and Darwin district. On the R. Ruia near Mt. Darwin in September, 1935, the flies were abundant in the river-banks on sandy ground with sparse vegetation. At this locality in early September, I observed a male dart at a yellow Chrysomelid beetle, *Hyperacantha* sp., which was disturbed from a shrub (*Rhus*. sp.).' Cuthbertson (1938), again using the name *maculipennis*, added the following – 'Widely distributed in Southern Rhodesia, especially in the more arid areas, and is prevalent from July to December. *Prey*: Male with tsetse fly, *Glossina morsitans*, Westw. (Muscidae), male, and female with same prey, female, in July, 1938, at Gota-Gota Camp, Urungwe, Lomagundi district (*W. L. Williams*).' There is a prey record in AMGS listed above.

Similar species: A member of the large and widely distributed group of species possessing a poorly defined facial gibbosity. The intraspecific variation displayed by this species, as currently defined, makes it difficult to comment on possible relationships with others species. *G. hadrocantha* and *ramphis* are perhaps most closely related to *ventralis*.

Gonioscelis whittingtoni sp. n.

Figs 134–136, 145

Etymology: Named for my friend Dr A. Whittington who accompanied me on an expedition to Kenya during the time he worked on Diptera at the Natal Museum.

Description: Based primarily on holotype ♂ (NMSA).

Head: Antennal scape and pedicel orange-brown, postpedicel dark red-brown with orange-brown proximal end, setae mostly shiny yellow. Facial swelling poorly developed, mystax uniform shiny yellow, setae between gibbosity and antennal sockets relatively poorly developed. Frons and vertex gold-silver pruinose. Ocellar tubercle apruinose with shiny yellow *oc*. Occiput gold-silver pruinose, setae shiny yellow. Proboscis and palpus dark red-brown to black, yellow setose.

Thorax: Dark red-brown to black, silver-gold pruinose. Postpronotal lobes orange, contrasting with adjacent mesonotum, with yellow setae. Mesonotal setae yellow: *ac* not evident; approx. 7 pairs *dc*, just extending anterior of transverse suture; 2–3 *npl*; 3 *sa*; 4–5 *pa*. Scutellum black, silver pruinose, with 6 yellow *mrg sct*. Wing length 7.2 mm, membrane pale yellow hyaline. Legs: Yellow except for following dark red-brown marks – prothoracic femur in region of spur, small patches on anterior faces of meso- and metathoracic femora, setae yellow. Prothoracic coxa orange-brown, silver pruinose, pale yellow setose; femoral spur sharply pointed (angle approx. 25°).

Abdomen: Tergites dark red-brown to black, gold-silver pruinose, yellow setose. Sternites similar to tergites.

Terminalia (Holotype macerated and studied, but Madzidzi Bay ♂ paratype illustrated, Figs 134–136): Long *ep* (lobes projecting beyond level attained by proctiger), lobes tapering distally to broadly rounded apices bearing long strong macrosetae; *gcx* with two distal projections and a group of fine setae; *hyp*, in ventral view, clearly longer than broad, tapering rapidly to deeply incised bilobed apex, lobes equipped with short fine setae.

Variation: A fairly uniform species displaying little individual variation or sexual dimorphism. The Madzidzi male illustrated has slightly more down-curved epandrial lobes in lateral view and slightly larger hypandrial lobes compared with the dissected holotype.

Type material: KENYA: 1♂ **holotype**, 3♂ 1♀ **paratypes**, ‘Kenya: West Pokot #67 / 4 km N of Marich Pass / 01°35'N 35°27'E 1000m / Date: 22.xi.1992 / A Whittington & L Londt / Open Acacia woodland’; 1♂ 1♀ **paratypes**, ‘Kenya. West Pokot – Rift / Valley. 20km N. of / Akeriamet. 01°42'N / 35°38'E. 1220m / 3-4 June 1980 / B. Lamoral’, ‘♂ + ♀ / in copulo’; 1♀ **paratype**, ‘Kenya 6km S Kapedo / Hot Waterfall 760m / 01°08'N 36°06'E / 2-3.vi.1980 B. Lamoral / Malaise trap’; MALAWI: 2♂ 4♀ **paratypes**, ‘Malawi #69, Lake Malawi, Madzidzi Bay / 14°10'S 35°00'E / Date: 3.xi.1996 / Coll: P. E. Reavell / Lowland Savannah’; 2♂ **paratypes**, ‘Pres. by / Imp. Bur. Ent. / Brit. Mus. / 192? [figure obscured by pin]’, ‘Nyasaland, / Lingadzi, / nr. Domira Bay. [13°35'S 34°27'E] / 1700 ft. 28.1.1915 [1♂] 30.1.1915 [1♂] / Dr. W.A. Lamborn’ (BMNH).

Type locality: Kenya, 4 km N of Marich Pass.

Other material: ERITREA: 1♀, ‘Eritrea: / Jebel [? Jebel Baka Island = Baca 15°04'N 40°19'E] / Geddem / 16.xii.1955 / D.J. Greathead’ (BMNH); 1♀, ‘Eritrea: / Mareb [Mereb Wenz 15°05'N 37°10'E] / Bridge / 12.x.1960 / D.J. Greathead’ (BMNH); 1♂, ‘Eritrea: / Hamasien [Hâmasēn Ãwraja 15°20'N 38°40'E] / 31.x.1958 / D.J. Greathead’ (BMNH); 1♀, ‘Eritrea: / Ailet [Ãylet 15°34'N 39°09'E] / (taken with prey) [*Ammophila* sp.] / 7.i.1956 / D.J. Greathead’ (BMNH). GHANA: 1♂, ‘Gold Coast / Tamala [Tamale 09°24'N 00°50'W] / 24.xi.51 / B210-51 / J. Bowden’ (BMNH). ZAMBIA: 1♂, ‘N. Rhodesia / Pemba [09°09'S 32°24'E] 1919 / Father Casset’ (SAMC); 1♂, ‘Northern

Rhodesia / Broken Hill [= Kabwe 14°27'S 28°27'E] / 1.1.12. / F.V. Bruce Miller. / 1913-199' (BMNH). ZIMBABWE: 1♂, 'S. Rhodesia: / Bindura. [17°18'S 31°20'E] / i.1929. / H.S. Leeson. / B.M. 1929-466', 'Bindura / S Rhodesia / HS Leeson 1:1929' (BMNH). UNKNOWN: 2♂, 'Zambesia', 'Bought / A. Ford', 'C.J. Wainwright / Collection. / B.M. 1948-488' (BMNH).

Distribution, phenology and biology (Tables 1–2, Fig. 145): Perhaps the most widely distributed species, straddling the equator and recorded from southern, central, north-eastern and western African countries. Specimens have been collected between October and January, although there are records for June, suggesting a lack of seasonality. Individuals have been collected on low vegetation in open *Acacia* woodland.

Similar species: A member of the large and widely distributed group of species possessing a poorly defined facial gibbosity.

Gonioscelis xanthochaites sp. n.

Figs 16, 137–139, 147

Etymology: Gr. *xanthos* – yellow + *chaite* – long hair, mane. Refers to the long yellow mesonotal setae possessed by this species.

Description: Based primarily on holotype ♂ (NMSA).

Head: Antennal scape brown-orange, pedicel brown, postpedicel dark red-brown, setae yellow. Facial swelling pronounced, mystax confined to gibbosity, mostly black (a few white setae in ventral half). Vertex weakly gold pruinose. Ocellar tubercle largely apruinose with black *oc*. Occiput silver pruinose, setae yellow (somewhat paler and wavy ventrally). Proboscis and palpus dark red-brown to black, pale yellow setose.

Thorax: Dark red-brown to black, silver-gold pruinose. Postpronotal lobes orange, contrasting with adjacent mesonotum, with many long yellow setae. Mesonotal setae mostly yellow (mixed with finer setae and difficult to count): *ac* weakly differentiated, dark brown; >10 pairs *dc*, clearly extending anterior of transverse suture, yellow postsuture, black anterior of suture; 4–5 *npl*; approx. 6 *sa*; approx. 6 *pa*. Scutellum dark red-brown, with approx. 8 yellow *mrg sct*. Wing length 8.2 mm, membrane stained light brown, with paler areas. Legs: All trochanters black, prothoracic femur orange with black base and spur, tibia and tarsus orange, setae yellow except for those on spur and a few on tarsus; mesothoracic femur, tibia and tarsus orange, all setae yellow except for a few on tarsus; metathoracic femur orange, narrowly black dorsobasally and dorsodistally, tibia orange with dark red-brown distal half, tarsus dark red-brown, setae yellow except for a few on tarsus. Prothoracic coxa black, silver pruinose, yellow setose; femoral spur (Fig. 16) sharply pointed (angle approx. 25°).

Abdomen: Tergites dark red-brown to black, thinly silver pruinose dorsally and along hind margins, rest shiny apruinose, setae long yellow wavy. Sternites dark red-brown, apruinose, setae long yellow wavy.

Terminalia (Figs 137–139): Short *ep* (proctiger projecting beyond level attained by epandrial lobes), lobes tapering distally to somewhat truncate setose apices; *gcx* with three distal projections and a small group of macrosetae; *hyp*, in ventral view, clearly broader than long, tapering rapidly to slightly widened almost trilobed truncate apex, lobes equipped with a number of macrosetae.

Variation: The two available specimens agree well with each other. Female unknown.

Type material: NAMIBIA: 1♂ **holotype**, 1♂ **paratype**, 'Namibia Outskirts of / Aus overlooking town / 2616CA 30.viii.1983 / Stuckenberg & Londt / Rocky area / Shrubs'.

Type locality: Namibia: Outskirts of the small town of Aus.

Distribution, phenology and biology (Tables 1–2, Fig. 147): Known only from the type locality in southern Namibia. The area receives winter rainfall and specimens were collected resting on boulders in August.

Similar species: A distinctive species that appears most closely similar to *punctipennis* and its allies. The wings lack the spotted appearance of *punctipennis*, but possess interesting shading unlike any other species in the 'complex' associated with *punctipennis* (*chloris*, *exouros*, *iota*, *kedros* and possibly *melas*).

Gonioscelis zulu sp. n.

Figs 140–142, 153

Etymology: Named after the Zulu people as this species inhabits Zululand (northern KwaZulu-Natal).

Description: Based primarily on holotype ♂ (NMSA).

Head: Antenna dark red-brown, setae short yellow. Facial swelling poorly developed, mystax yellow-white, setae in dorsal area not as well developed as those on gibbosity. Frons and vertex thinly gold pruinose. Ocellar tubercle apruinose with yellow *oc*. Occiput gold-silver pruinose, setae yellow-white. Proboscis and palpus dark red-brown, yellow-white setose.

Thorax: Dark red-brown to black, silver gold pruinose. Postpronotal lobes and immediately adjacent area of mesonotum brown-orange, contrasting with rest of mesonotum, with tiny yellow setae. Mesonotal setae yellow-white: *ac* not evident; approx. 6 pairs *dc*, short, not extending anterior of transverse suture; 4 *npl*; 3–5 *sa*; 5 *pa*. Scutellum dark red-brown with orange-brown margin, silver-gold pruinose, with 6 yellow-white *mrg sct*. Wing length 9.2 mm, membrane yellow proximally light brown with paler areas distally. Legs: Entirely orange with no dark markings, setae mostly black, a few yellow-white especially on ventral surfaces of tibiae. Prothoracic coxa black, gold-silver pruinose, white setose; femoral spur bluntly pointed (angle approx. 70°).

Abdomen: Tergites dark red-brown anteriorly, brown-orange posteriorly, becoming increasingly orange towards distal segments that are entirely orange, thinly gold pruinose, setae short pale yellow-white. Sternites uniformly brown-orange, apruinose except for tiny rectangular areas posteromedially, setae short yellow-white.

Terminalia (Figs 140–142): Long *ep* (epandrial lobes project well beyond level attained by proctiger), lobes with somewhat swollen appearance tapering distally to smoothly downturned rounded apices bearing strong macrosetae; *gcx* with two distal projections and fine setae; *hyp*, in ventral view, large, as broad as long, tapering to broad upturned bilobed apex, lobes equipped with a number of macrosetae dorsally.

Variation: A fairly uniform species.

Type material: SOUTH AFRICA: 1♂ **paratype**, 'Ndumu Reserve [26°55'S 32°15'E] / Ingwavuma dist. / Zululand, Natal / South Africa', 'Collector / T. Oatley / 11.5.61', '*Gonioscelis* ♂ / *ventralis* Schiner / det. H. Oldroyd 1972'; 1♂ 3♀ **paratypes**, 'S Africa: Natal #5 / Mkuzi Game Reserve / 27°38'S 32°14'E 160m / Date: 12.i.1994 / Natal Musm Expedition / Nsumu Pan Area'; 1♂ **paratype**, 'KwaZulu-Natal, RSA / False Bay Park [27°59'S 32°22'E], St / Lucia 17-21/2/1997 / Coll. A Weaving'; 1♂ **holotype** 1♂ 2♀ **paratypes**, 'S Africa: KwaZulu-Natal / Umfolozi Game Reserve / Emoyeni Trail area 245m / 28°19'08.2"S 31°50'16.3"E / J.G.H. Londt 10.iii.2004 / Woodland Sand & rocks'; 2♂ **paratypes**, 'RSA: KZ-Natal #04 / Umfolozi Game Reserve / 28°19'S 31°52'E 300m / Date: 17.iii.1995 / Coll: J.G.H. Londt / Acacia Woodland'; 1♀ **paratype**, 'Natal / Hluhluwe Game R / 18-21.iii.1985 / A Weaving', 'Nantulu Hide' [with prey – Hymenoptera: Mutilidae, male] (AMGS); 1♂ **paratype**, 'South Africa: Natal / Nyala Park Reserve / 3145E 2840S 17.iv.82 / P E Reavell 180m / Comatose on / grass *Sporobolus*'; 1♀ **paratype**, 'South Africa: Natal / Nyala Park Reserve / 3145E 2840S 18.iv.82 / P E Reavell 180m / Comatose on / flower'; 2♂ 3♀ **paratypes**, 'South Africa: KZ-Natal / Mhlopeni Nature Reserve / 29°01'13.0"S 30°25'01.6"E / 860m J Londt & T Dikow / 13.ii.2004 *Acacia* savanna'; 1♂ 1♀ **paratypes**, 'South Africa: Natal / Mhlopeni Nat Reserve / 2930AB 8.iv.1983 / 8km SE of Muden / Londt, Barraclough & Seymour Thornveld'.

Notes: Oldroyd (1974) recorded the Ndumu specimen under *ventralis*. The photograph provided in Picker *et. al.* (2002: 278, Fig. 4), is not *ventralis*, but most likely depicts *zulu*.

Type locality: South Africa: KwaZulu-Natal, Umfolozi Game Reserve.

Distribution, phenology and biology (Tables 1–2, Fig. 153): A species known only from Savanna situations in the central and north-western parts of KwaZulu-Natal province, South Africa. Specimens have been found resting on the ground between grass tussocks. A specimen in AMGS is pinned with prey (Hymenoptera: Mutilidae, alate ♂).

Similar species: A member of the large and widely distributed group of species possessing a poorly defined facial gibbosity. This is one of the most distinctive species, having characteristic, somewhat large, rounded male genitalia. No obvious sister species has been identified.

Gonioscelis sp.

An undescribed species from Somalia has been studied. Unfortunately there are no male specimens and so the species is left undescribed. Suffice it to note that this small species (wing length 6 mm) is a member of the large and widely distributed group of species possessing a poorly defined facial gibbosity, and represents the first record of *Gonioscelis* from Somalia, the most easterly record for the genus. Apart from noting the following details regarding the two females studied, and including the species in Tables 1 & 2, no further comment is made.

Material examined: SOMALIA: 1♀, 'Somalia / Mogadishu [02°04'N 45°22'E] / iv-29-86 / R. Lavigne'; 1♀, 'Somalia / Mogadishu / v-10-86 / R. Lavigne'.

DISCUSSION

Taxonomy

Although the genus is easily recognised, the characterisation of species is far more difficult. Only a few species can be recognised immediately using superficial morphological characteristics, and most need to be identified using features of the male genitalia. This means that female specimens that are not correctly associated with males from the same locality may be impossible to identify with any certainty. Males can, however, usually be identified relatively easily by studying features of the post-abdomen. While the removal of the terminalia and their maceration greatly assists in exposing details of the genitalia, it is often possible to see the more important features using a lens or microscope without excising the terminalia. While there is no doubt that a number of useful characters may be found associated with the gonocoxite and aedeagus, normally not easily seen without dissection and maceration, identification can be made using the more externally visible epandrium and hypandrium. Although a few species groups can be detected within the genus, these are not defined in this study.

Biology and distribution

Nothing is known about the immature stages of any *Gonioscelis* species. Imagos usually frequent open habitats in a wide variety of biomes. They are capable of rapid and fairly sustained flight, but usually fly close to the ground and settle on the ground or on low vegetation. Mating takes place with male and female facing in opposite directions in a tail-to-tail position, and eggs are usually deposited into loose soil.

While detailed distributional information is provided for each species, some general comments are appropriate. *Gonioscelis* is widely distributed (Table 1, Fig. 143), being associated mainly with the very extensive Grassland, Savanna and Succulent Karoo biomes. Although label data attached to some specimens suggest a possible association with forests, it is highly unlikely that any species actually inhabit forests. This belief is supported by the fact that the large area occupied by central and west African forests has yielded very few specimens. It is likely that those specimens apparently linked with forests were actually collected in more open habitats adjacent to forest.

Of the 38 species, 30 (79%) are found in southern Africa, most of these being endemic to this subregion, perhaps suggesting that the genus has its evolutionary history centred in this part of Africa. It is particularly significant that of the 22 species occurring in South Africa (i.e. 58% of all species), 13 (59%) are restricted to the 'west coast' of the Northern Cape and Western Cape provinces. This region, dominated by Succulent Karoo and Fynbos biomes, is unusual in an afrotropical context in that it receives winter rainfall. Species inhabiting this interesting region are usually encountered in spring (mainly between August and October) when temperatures are relatively cool in comparison with the high temperatures experienced during summer, and are in most instances easily recognised as they tend to possess a combination of rather unique morphological characteristics. Most are fairly darkly pigmented and possess prominent facial gibbosities and black setation. From a thermoregulatory perspective, these features probably serve them well. Within this group of west coast species there is a sub-group (i.e. *punctipennis* and its allies) of small species that are usually found resting on dark rocks, where they are often difficult to see, rather than on sandy substrates. Four of these species possess spotted wings that may serve as part of their camouflage when they are at rest.

In comparison with these west coast species, those inhabiting summer-rainfall areas tend to be larger and paler, and have flatter facial gibbosities. These species tend to be associated with Grassland or Savanna biomes, where individuals are usually encountered resting on the ground or on low vegetation.

Predation

At the time of writing, there were 1976 prey records in the Natal Museum's computerised asilid-prey database. Of these, 74 (3.8%) pertain to *Gonioscelis*. Species (16) for which prey has been recorded are as follows – *bykanistes* (6), *haemorhous* (2), *iota* (1), *lacertosus* (4), *longulus* (3), *macquartii* (1), *maculiventris* (25), *mantis* (2), *pickeri* (6), *punctipennis* (5), *ramphis* (1), *scapularis* (1), *truncatus* (5), *ventralis* (6), *whittingtoni* (1), *zulu* (1), undetermined species (4). Of the 74 records, 60 (81%) relate to females, while only 14 (19%) are for males. Such gender inequality is reasonably well documented, but not understood. Prey items belong to six orders of insects as follows – Coleoptera 51 (69%), Hymenoptera 11 (15%), Diptera 5 (7%), Hemiptera 4 (5%), Isoptera 2 (3%), Lepidoptera 1 (1%), graphically depicted in Fig. 154. Most of the Coleoptera are Scarabaeidae (38 – 75%) and many of them are flower-visiting Rutelinae. While it is possible that the spurred prothoracic femora and ventrally setose fore tibiae (Fig. 1) are adaptations for feeding on hard-bodied beetles, as suggested by Oldroyd (1974), many other asilids (particularly species of *Promachus*, *Hoplistomerus*, *Microstylum* and *Neolophonotus*) that feed on scarabs do not appear to possess any special adaptations. It is significant that some 30 (79%) of the 38 scarab records were collected in the Western Cape province of South Africa and along the western coastal plain of the Northern Cape. Flower-visiting ruteline beetles can be exceptionally abundant during the short annual flowering period of many plants growing in these winter-rainfall areas of South Africa. Their dominance in the diet of *Gonioscelis* may, therefore, be purely coincidental.

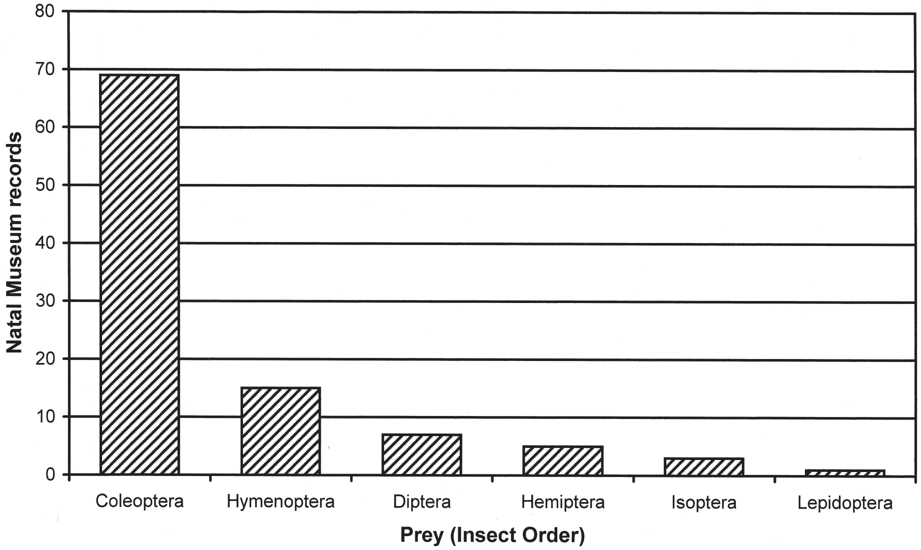


Fig. 154. Recorded prey (insect orders) for *Gonioscelis* species expressed as percentages of total available records (74) for the genus.

TABLE 1

Distribution of *Gonioscelis* species. Abbreviations: A = Angola; Bo = Botswana; Bu = Burundi; Ca = Cameroon; Co = DR Congo; Et = Ethiopia; Er = Eritrea; G = Ghana; K = Kenya; L = Lesotho; Ma = Malawi; Mo = Mozambique; N = Namibia; SA = South Africa; So = Somalia; Su = Sudan; Ta = Tanzania; Tc = Tchad; U = Uganda; Za = Zambia; Zi = Zimbabwe.

Region	Southern						Central						Northern						Western		
Species	SA	L	N	Bo	Zi	Mo	A	Za	Ma	Co	Bu	Ta	K	U	Su	Et	Er	So	Tc	Ca	G
amnoni	-	-	-	-	-	-	-	-	-	-	-	●	●	-	-	-	-	-	●	●	-
batyleon	-	-	-	-	-	-	-	-	-	-	-	-	●	-	-	-	-	-	-	-	-
bykanistes	●	-	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ceresae	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
chloris	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
congoensis	-	-	-	-	-	-	-	-	-	●	-	-	-	-	-	-	-	-	-	-	-
cuthbertsoni	-	-	-	-	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
engeli	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
exouros	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
feijeni	-	-	-	-	-	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
francoisi	-	-	-	-	-	-	-	-	-	-	●	-	-	-	-	-	-	-	-	-	-
genitalis	-	-	●	-	●	-	●	●	-	-	-	-	-	-	-	-	-	-	-	-	-
hadrocantha	-	-	-	-	-	-	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-
haemorhous	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
hispidus	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
iota	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
kedros	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
lacertosus	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
longulus	●	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
macquartii	-	-	-	-	●	-	-	-	-	-	-	●	●	●	●	●	-	-	-	-	-
maculiventris	●	-	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
mantis	●	-	-	-	-	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
melas	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
nigripennis	-	-	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
occipitalis	-	-	-	-	-	-	-	-	-	●	-	-	-	-	-	-	-	-	-	-	-
phacopterus	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
pickeri	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
pruinosus	-	-	-	-	-	-	-	-	-	-	-	●	●	●	-	-	-	-	-	-	-
punctipennis	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ramphis	●	-	-	●	?	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
scapularis	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
submaculatus	-	-	-	-	●	-	-	-	●	-	-	●	●	-	-	-	-	-	-	-	-
tomentosus	-	-	-	-	●	-	●	●	●	●	-	-	-	-	-	-	-	-	-	-	-
truncatus	●	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ventralis	●	-	●	●	●	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
whittingtoni	-	-	-	-	●	-	-	●	●	-	-	-	●	-	-	-	●	-	-	-	●
xanthochaites	-	-	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
zulu	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
sp.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	●	-	-	-
Total	22	2	6	2	7	3	3	3	3	3	1	4	6	2	1	1	1	1	1	1	1

TABLE 2
Phenology of *Gonioscelis* species. Open circle indicates assumed presence in the absence of actual data.

Species	**Jul**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**Jun**
amnoni	-	-	-	•	•	-	-	-	-	-	•	-
batyleon	-	-	-	-	-	-	-	•	-	-	-	-
bykanistes	-	-	-	-	-	•	•	•	•	•	-	-
ceresae	-	-	-	-	•	•	-	-	-	-	-	-
chloris	-	•	-	-	-	-	-	-	-	-	-	-
congoensis	-	-	-	-	-	-	•	-	-	-	•	•
cuthbertsoni	-	•	•	-	-	-	-	-	-	-	-	-
engeli	-	•	•	•	-	-	-	-	-	-	-	-
exouros	-	-	•	-	-	-	-	-	-	-	-	-
feijeni	-	-	-	-	-	-	-	-	•	-	-	-
francoisi	-	-	-	•	-	•	-	-	-	-	-	-
genitalis	-	-	-	-	-	-	-	•	•	•	•	-
hadrocantha	-	-	-	-	-	-	-	-	•	-	-	-
haemorhous	•	•	•	•	•	•	-	-	-	-	-	-
hispidus	-	-	•	•	•	•	•	-	-	-	•	-
iota	-	•	•	•	-	-	-	-	-	-	-	-
kedros	-	-	•	-	-	-	-	-	-	-	-	-
lacertosus	-	-	•	•	•	•	•	•	•	-	-	-
longulus	-	-	-	-	-	-	-	•	•	•	•	-
macquartii	•	•	•	-	•	•	•	•	•	•	•	•
maculiventris	•	•	•	•	o	•	o	•	o	•	-	-
mantis	-	-	•	•	•	•	•	•	•	•	-	-
melas	-	-	•	•	•	-	-	-	-	-	-	-
nigripennis	-	-	-	-	-	-	-	-	•	-	-	-
occipitalis	-	-	•	-	-	-	-	-	-	-	-	-
phacopterus	-	-	-	-	-	-	•	-	-	-	-	-
pickeri	-	•	•	•	o	o	o	•	-	-	-	-
pruinosus	•	o	•	o	•	•	o	•	•	•	•	o
punctipennis	-	•	•	•	-	-	-	-	-	-	-	-
ramphis	-	-	-	-	?	-	•	o	•	•	-	-
scapularis	-	•	•	•	•	-	-	•	-	-	-	-
submaculatus	•	•	•	•	-	-	•	-	-	-	-	-
tomentosus	-	•	•	o	•	o	-	-	-	-	•	-
truncatus	-	-	-	•	•	•	•	•	-	-	-	-
ventralis	-	-	•	•	•	•	•	•	•	•	•	-
whittingtoni	-	-	-	•	•	•	•	-	-	-	-	•
xanthochaites	-	•	-	-	-	-	-	-	-	-	-	-
zulu	-	-	-	-	-	-	•	•	•	•	•	-
Somalia sp.	-	-	-	-	-	-	-	-	-	•	•	-
Total	**5**	**13**	**20**	**17**	**14**	**13**	**13**	**14**	**13**	**11**	**11**	**3**

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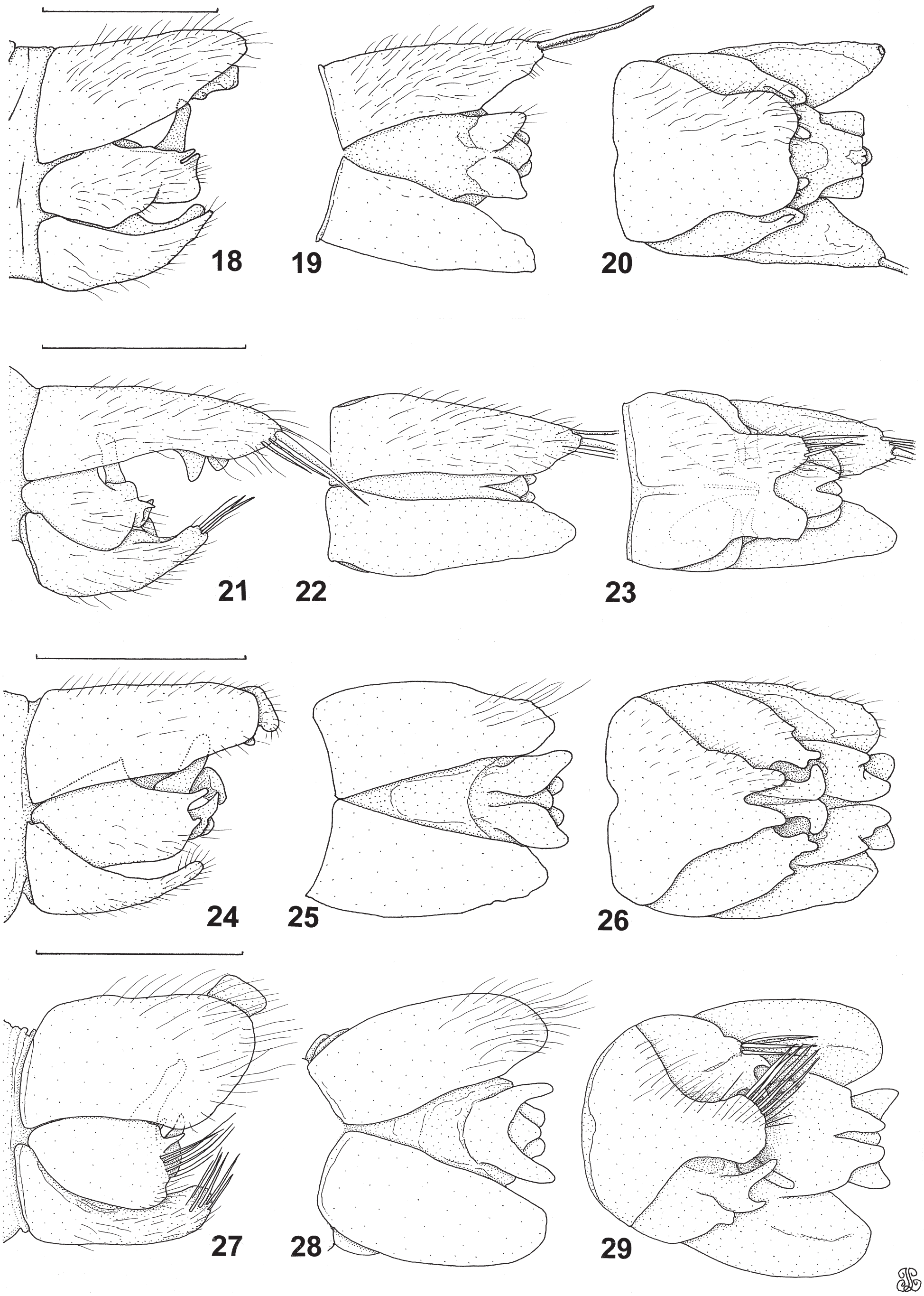

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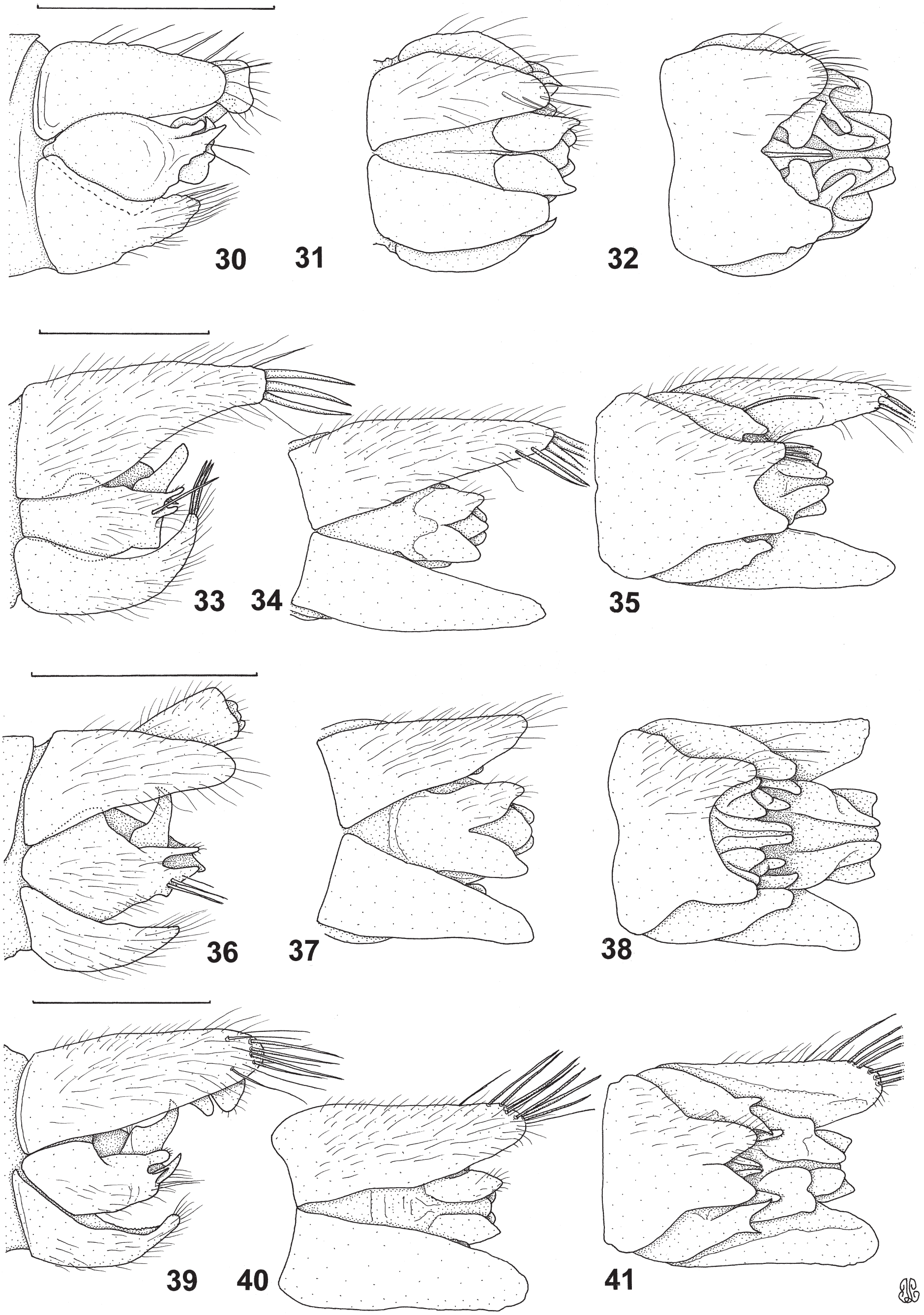

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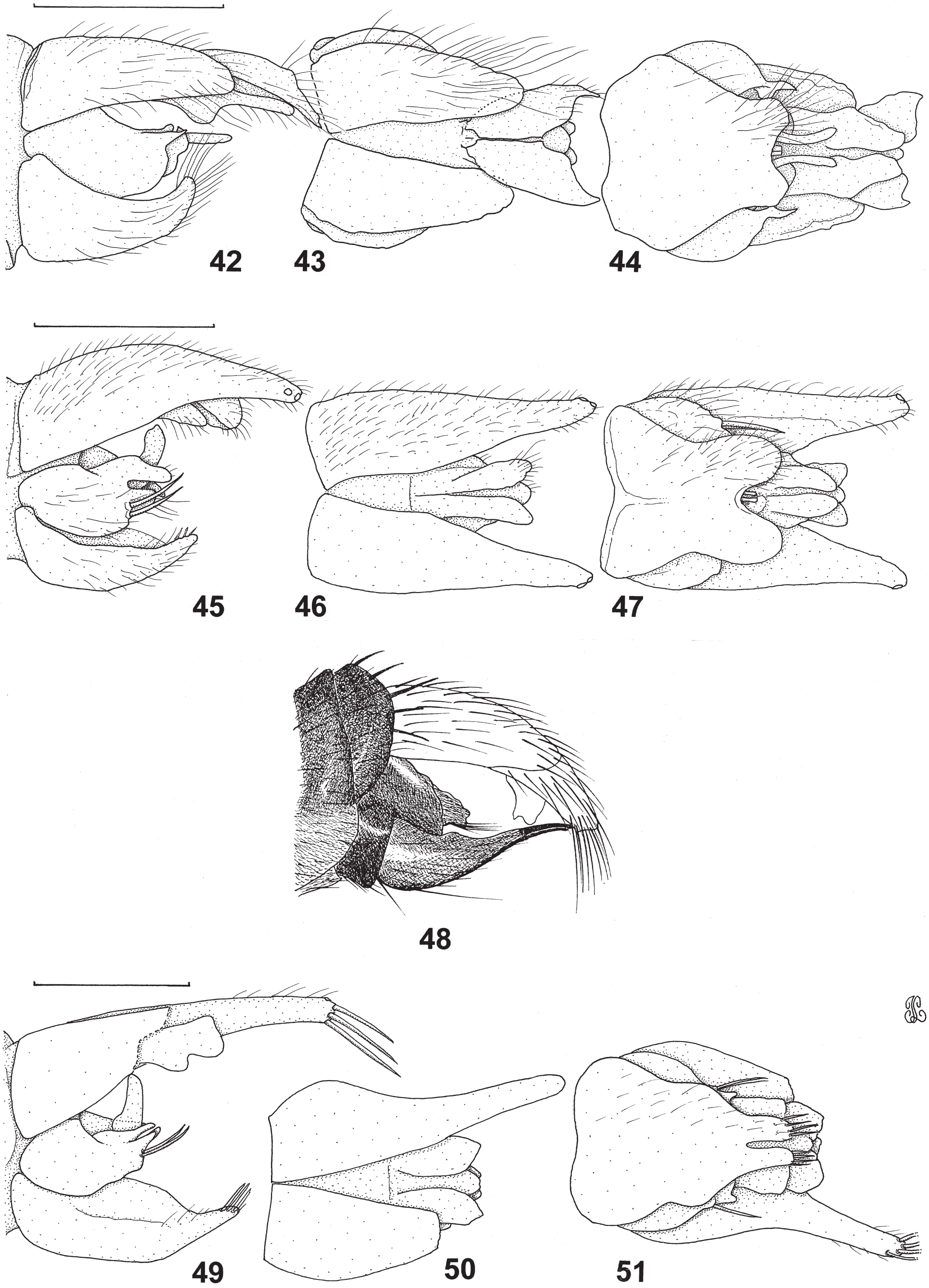

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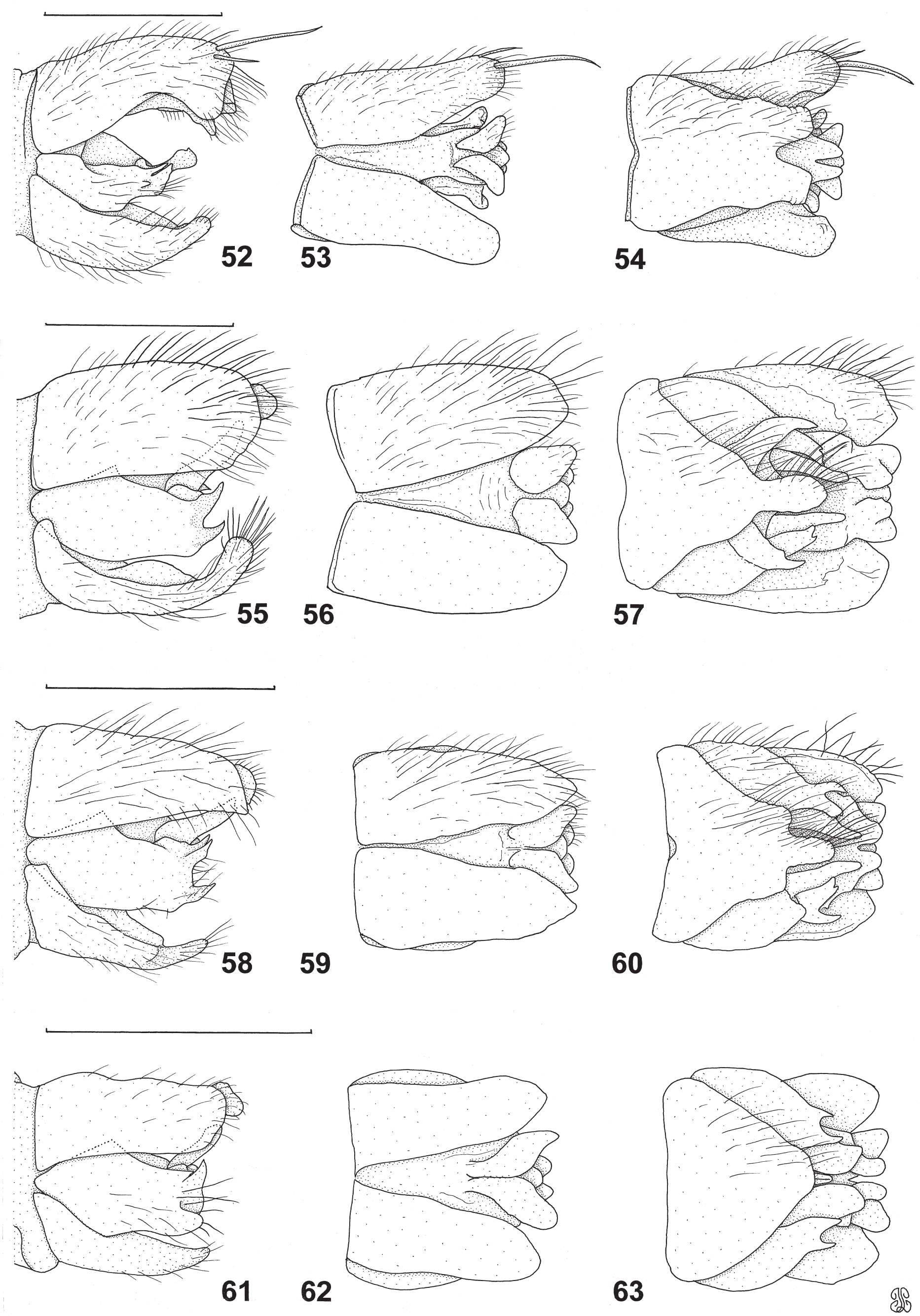

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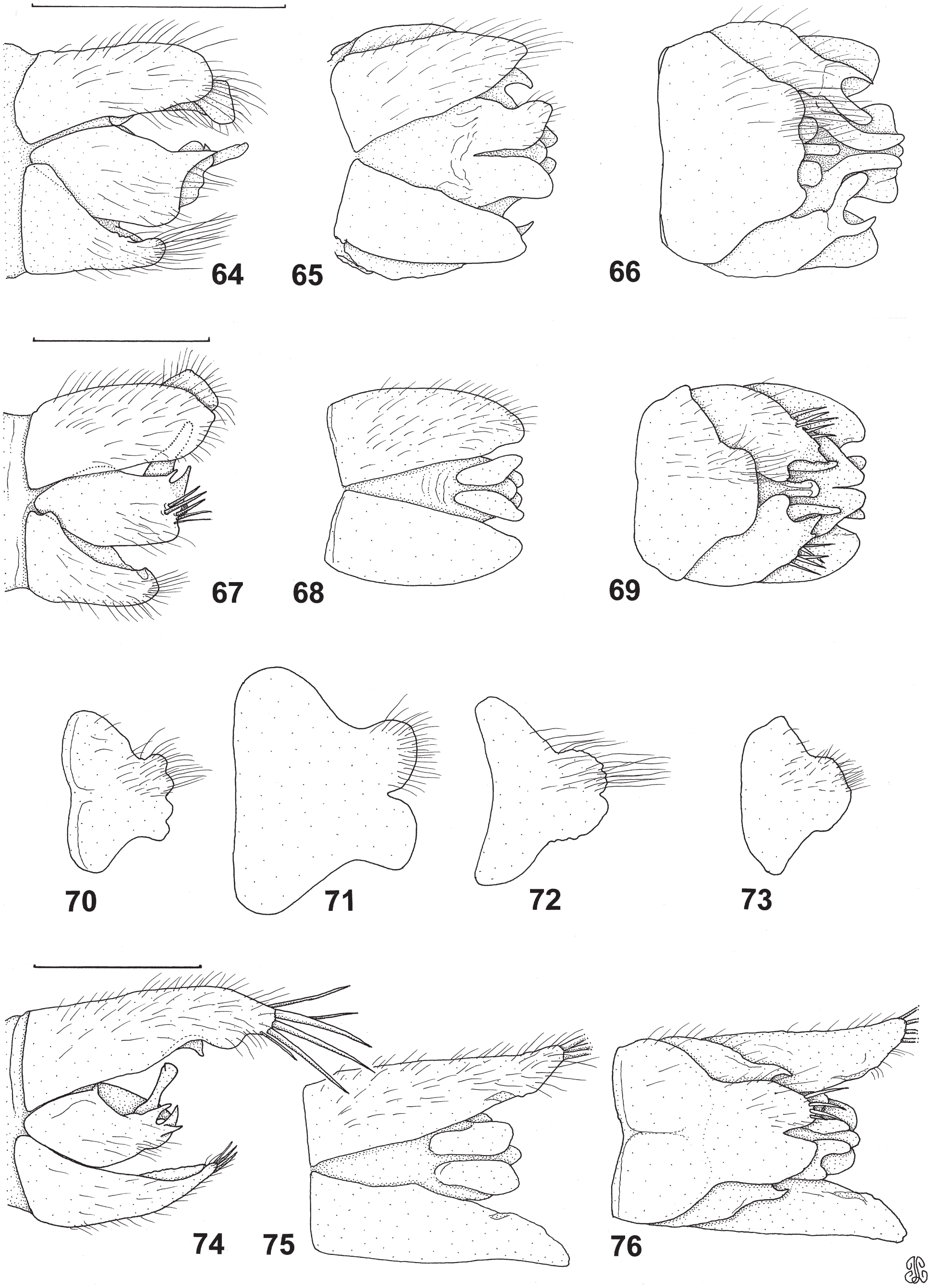

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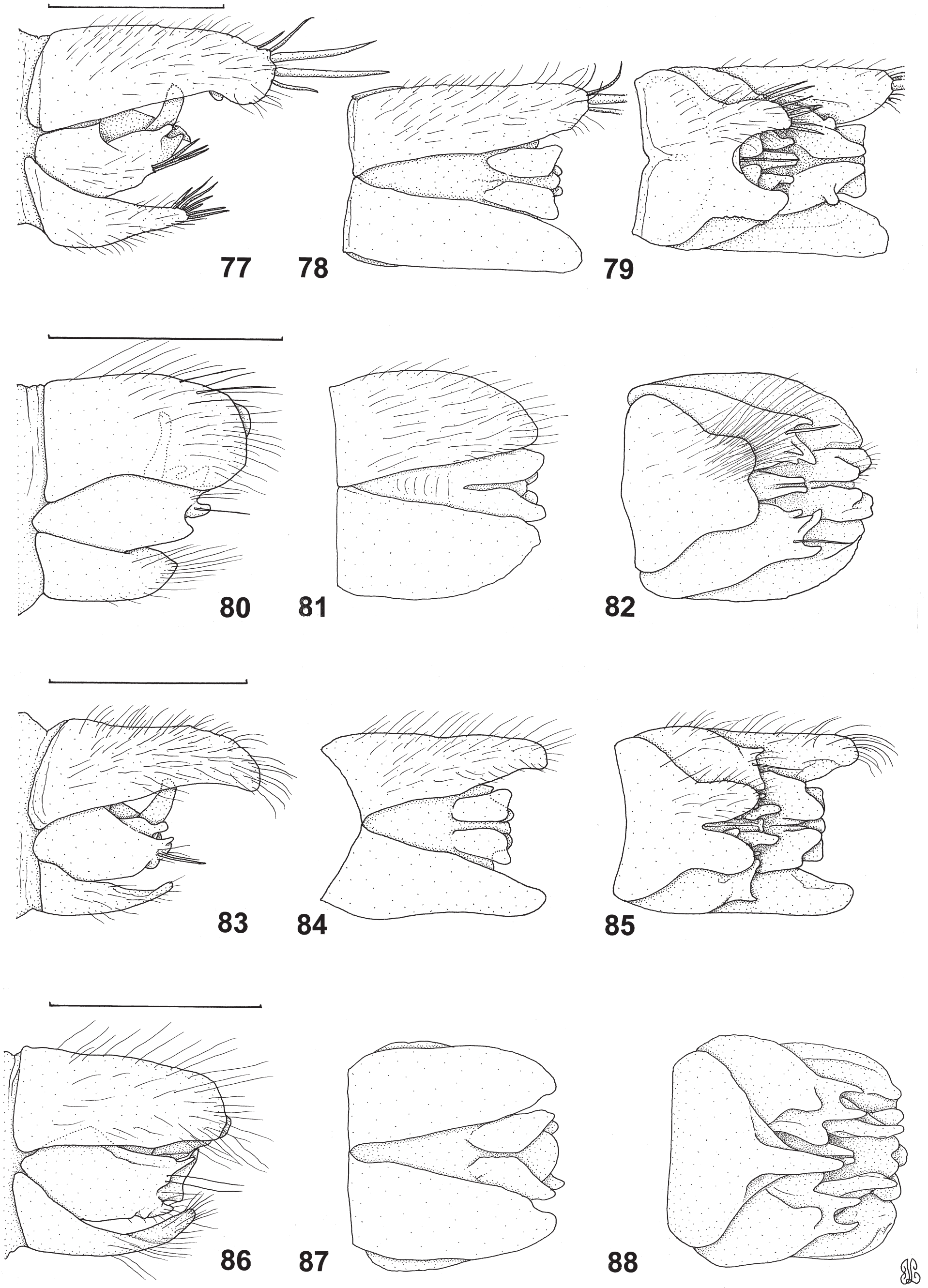

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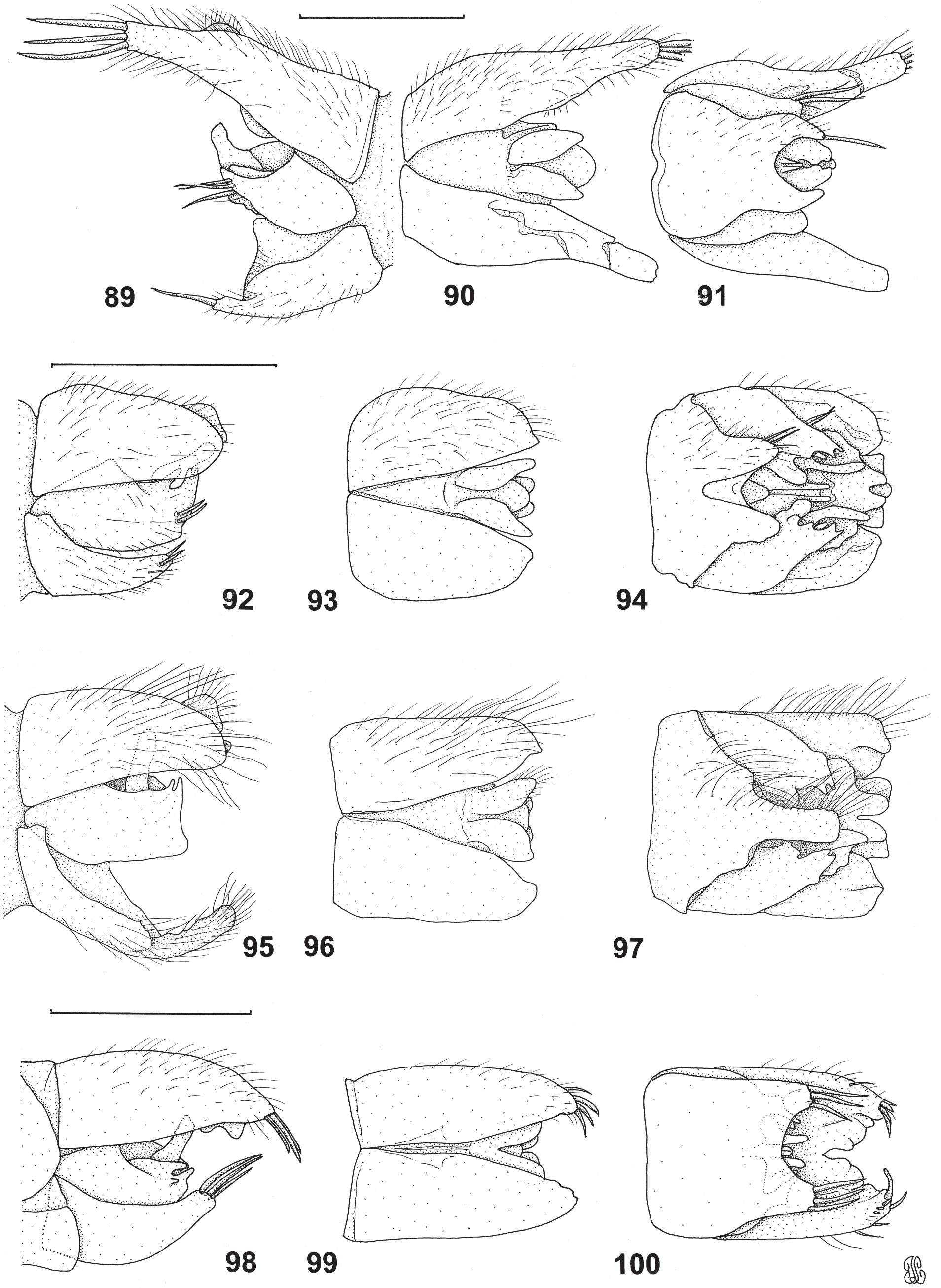

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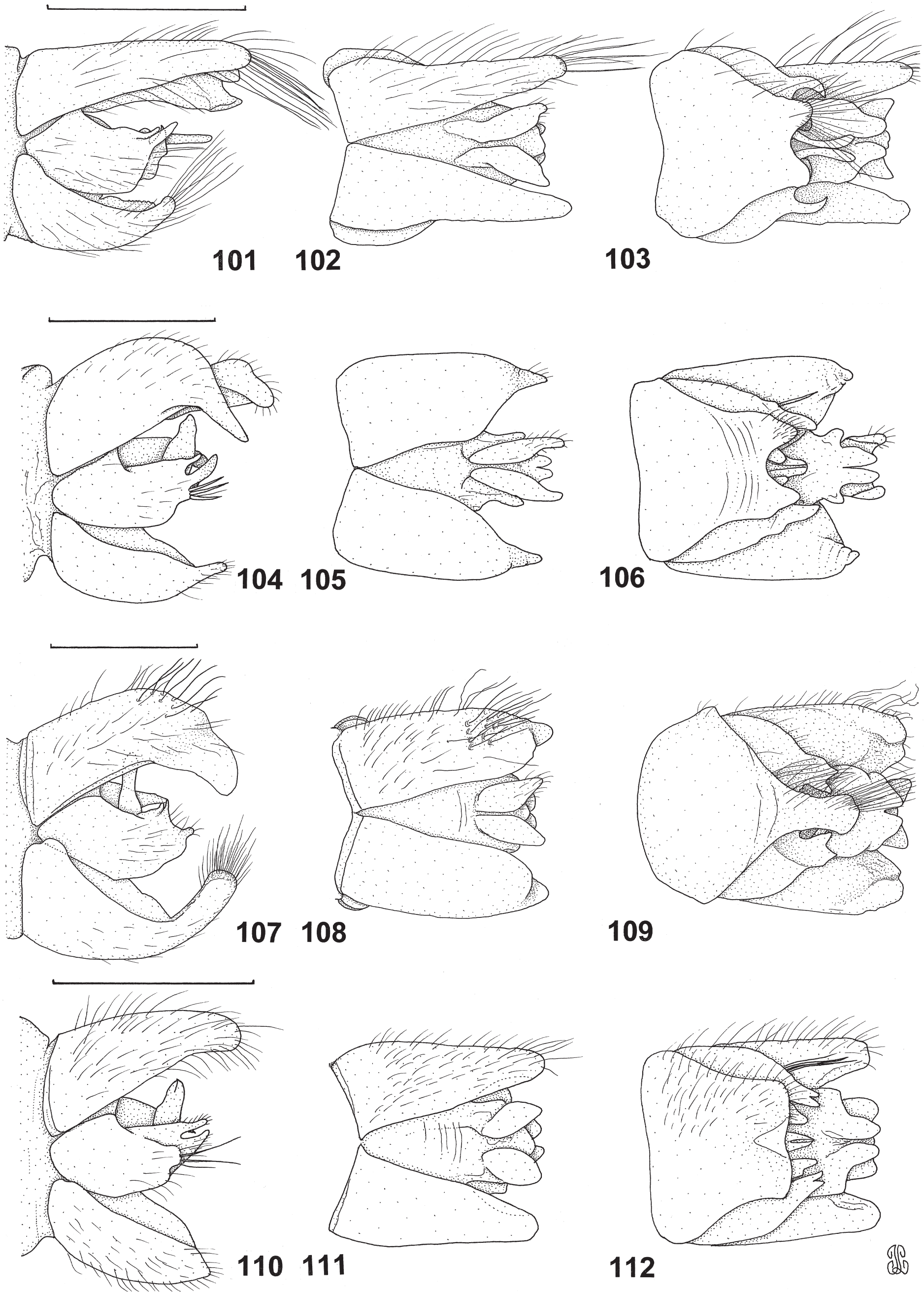

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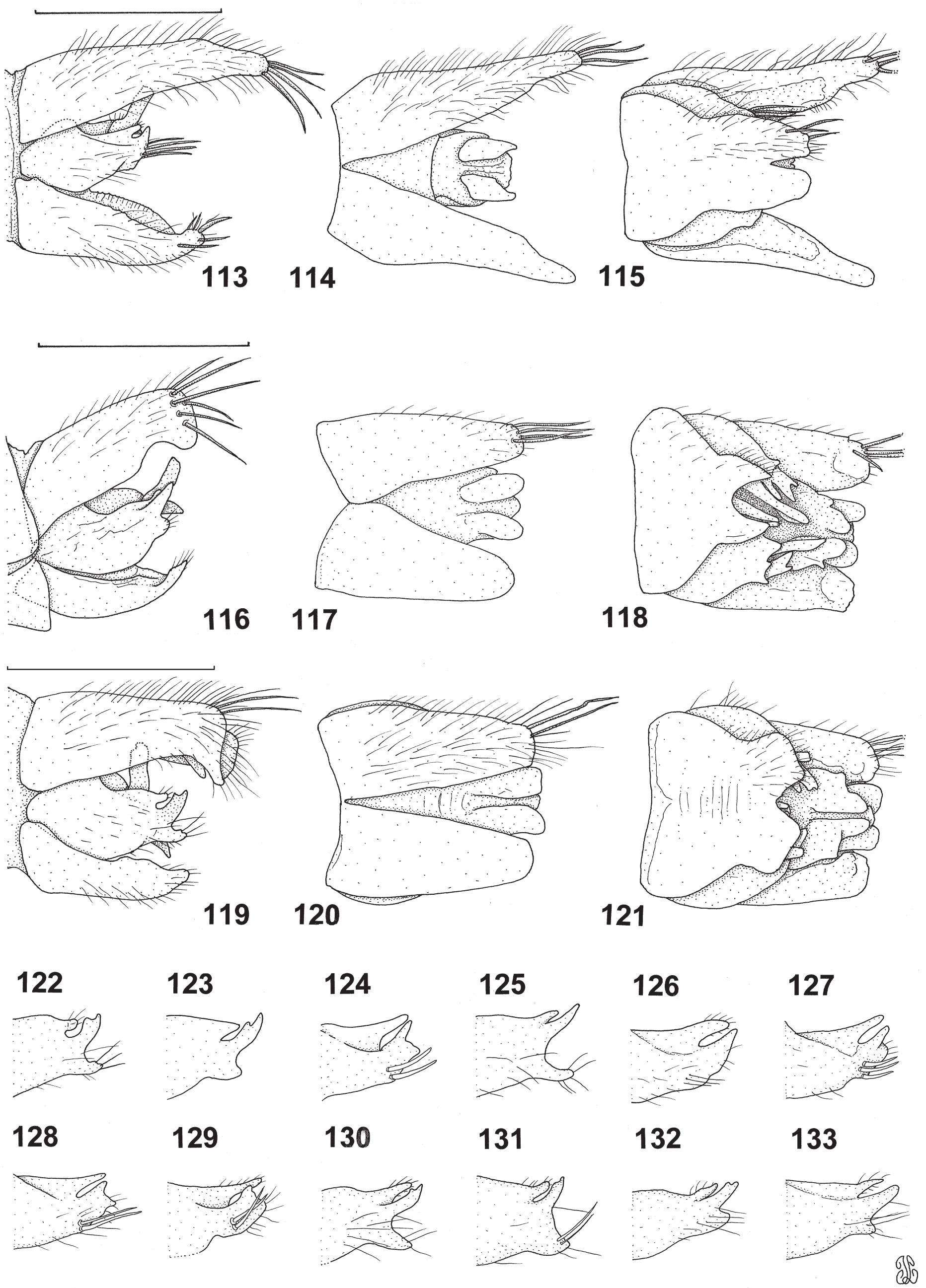
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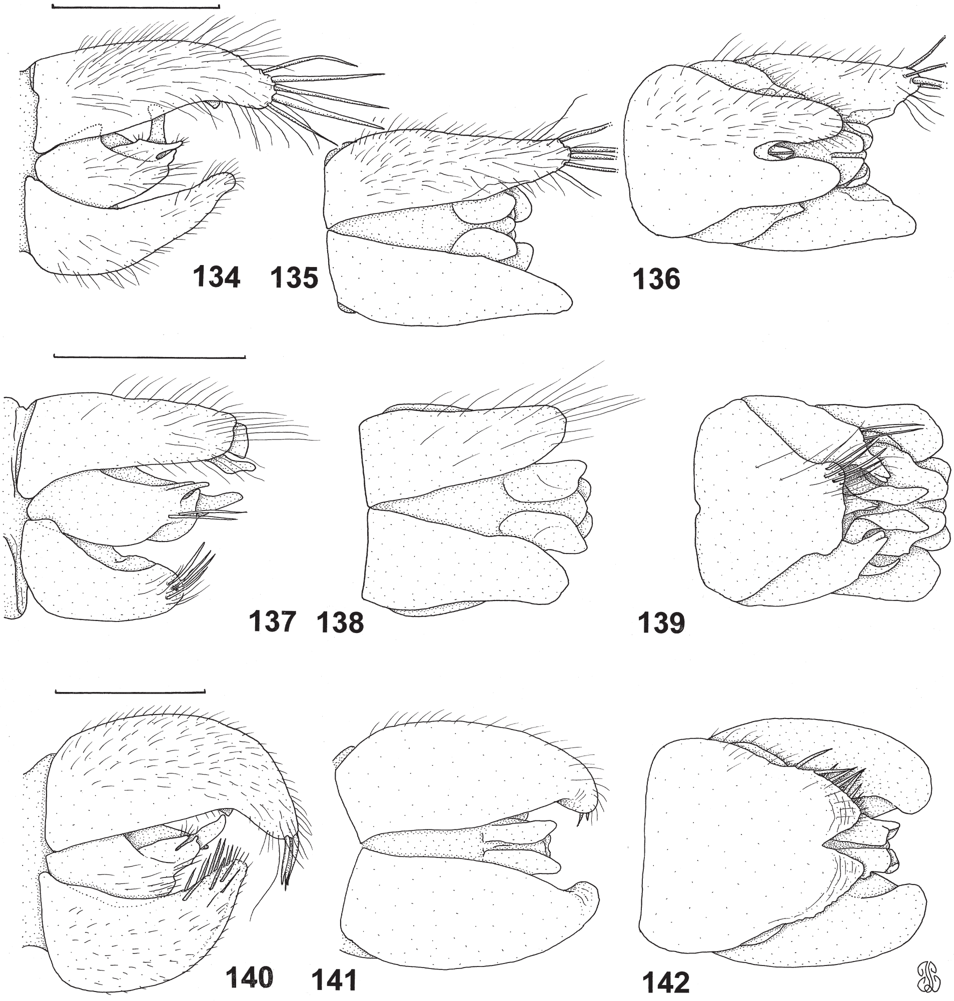


Figs 134–142. *Gonioscelis* male genitalia. 134–136. *G. whittingtoni* sp. n. (Madzidzi Bay paratype). 134. Lateral. 135. Dorsal. 136. Ventral. 137–139. *G. xanthochaites* sp. n. (Aus paratype). 137. Lateral. 138. Dorsal. 139. Ventral. 140–142. *G. zulu* sp. n. (Mhlopeni Nature Reserve paratype). 140. Lateral. 141. Dorsal. 142. Ventral. Scale lines = 1 mm.

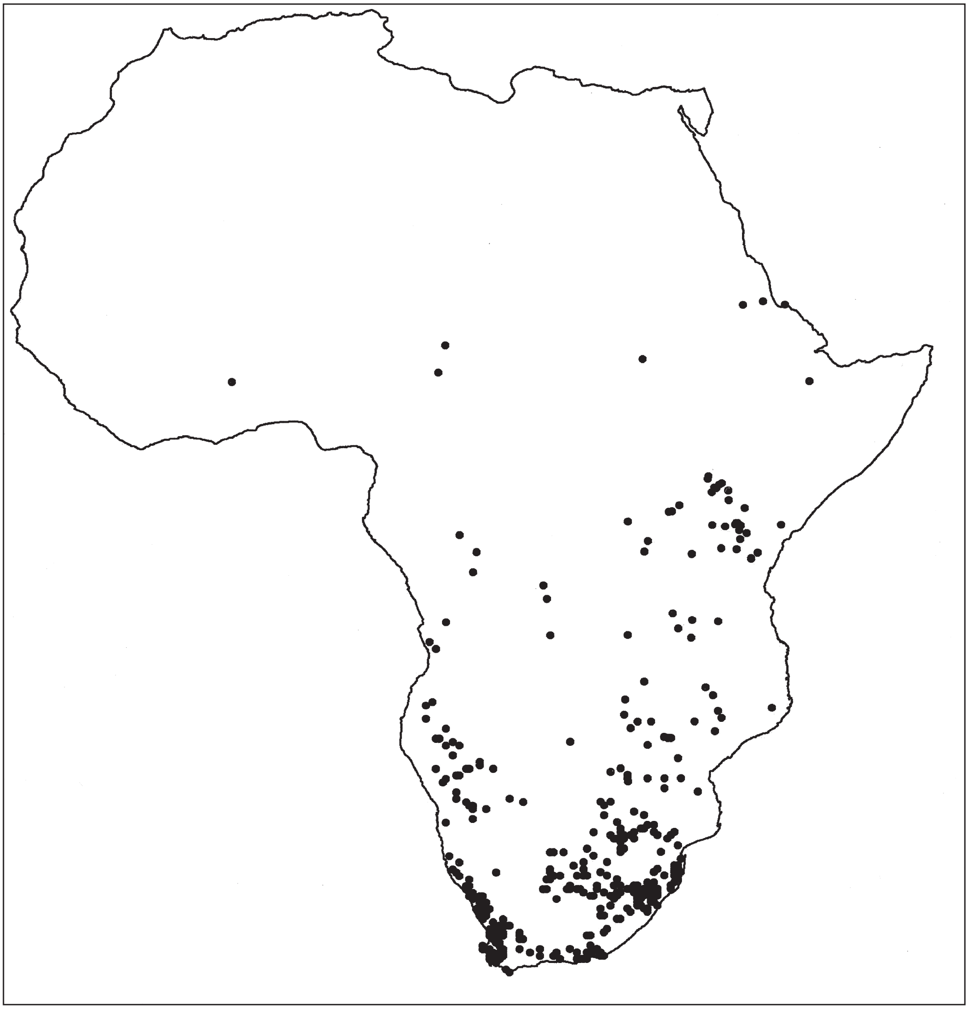


Fig. 143. The distribution of *Gonioscelis* species.

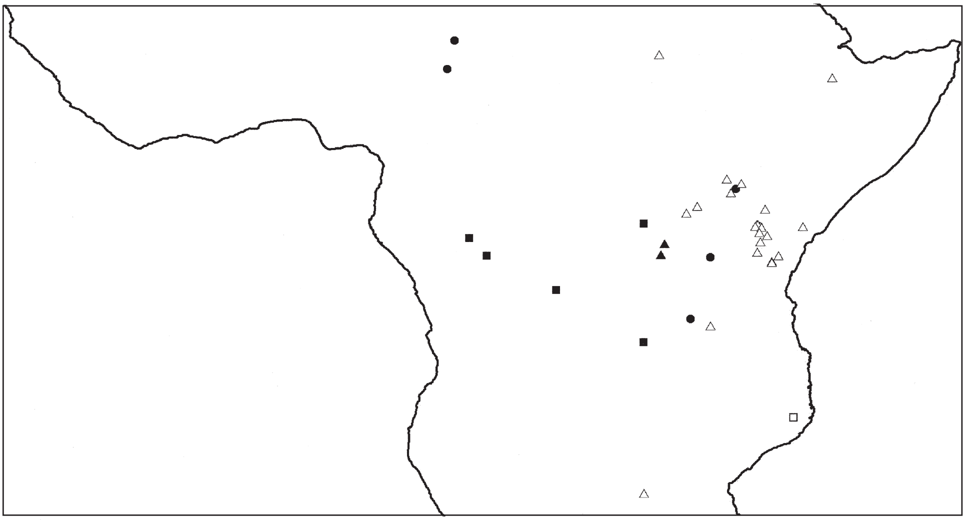


Fig. 144. Distribution of *Gonioscelis* species found north of southern Africa. closed circle = *amnoni*, open circle = *batyleon*, closed square = *congoensis*, open square = *feijeni*, closed triangle = *francoisi*, open triangle = *macquartii*.

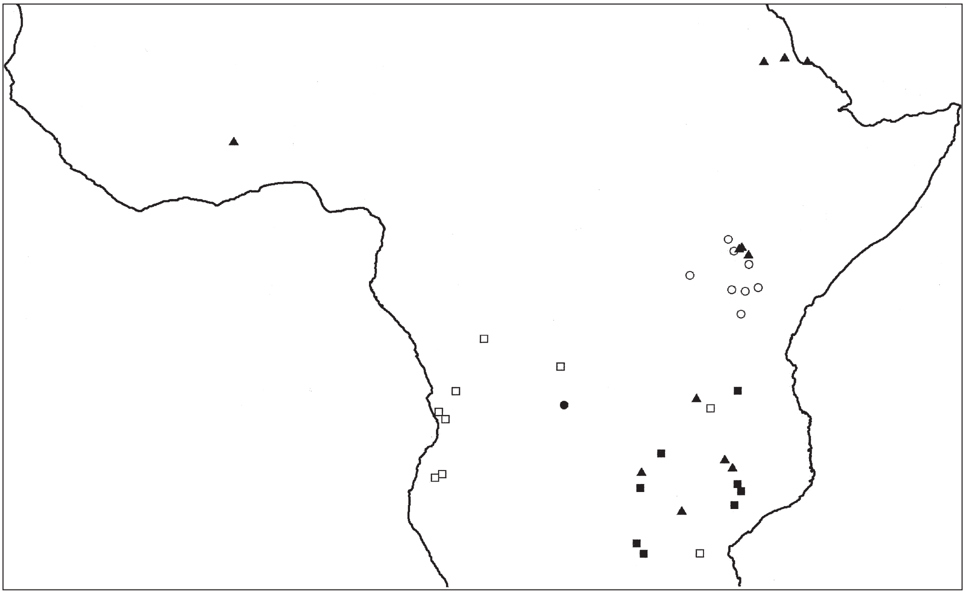
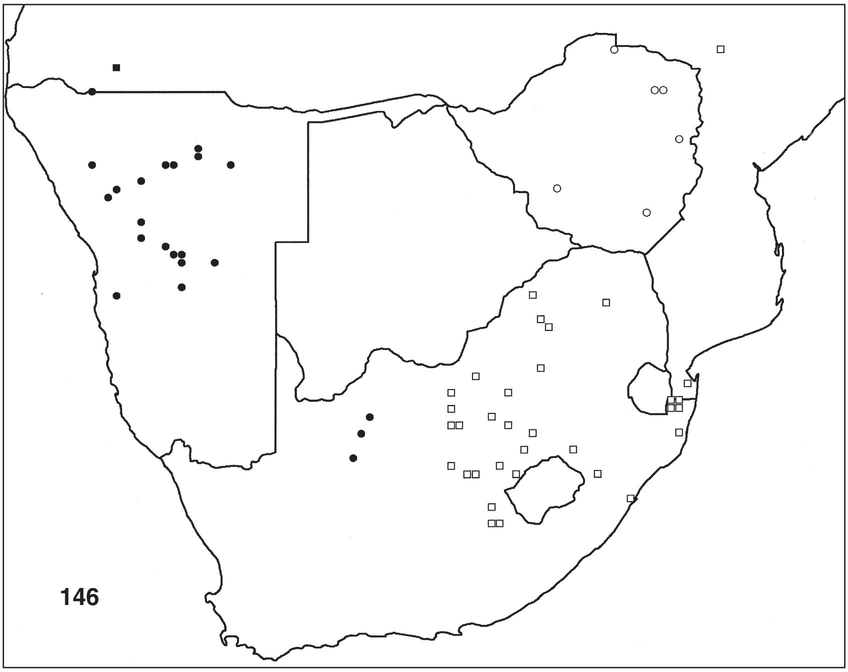
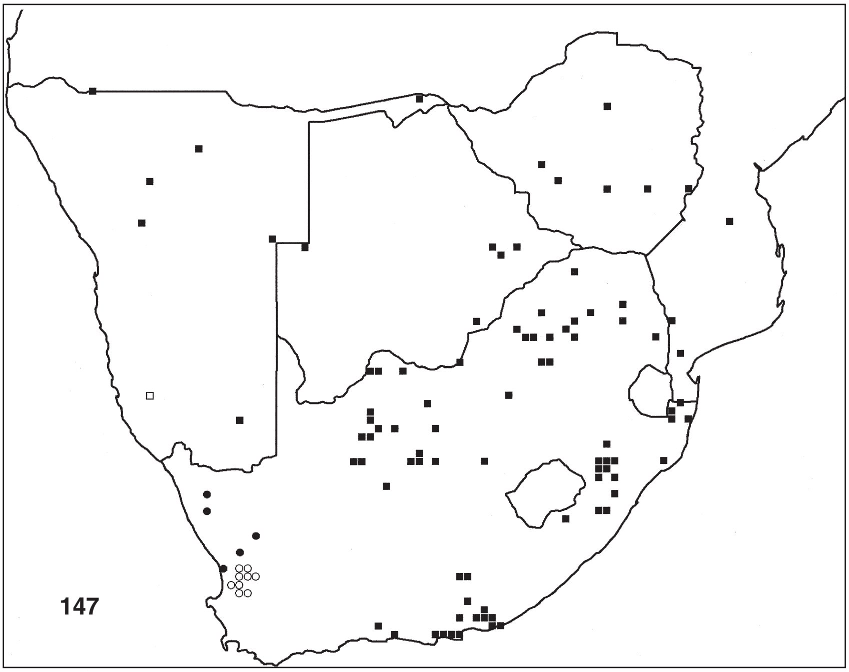
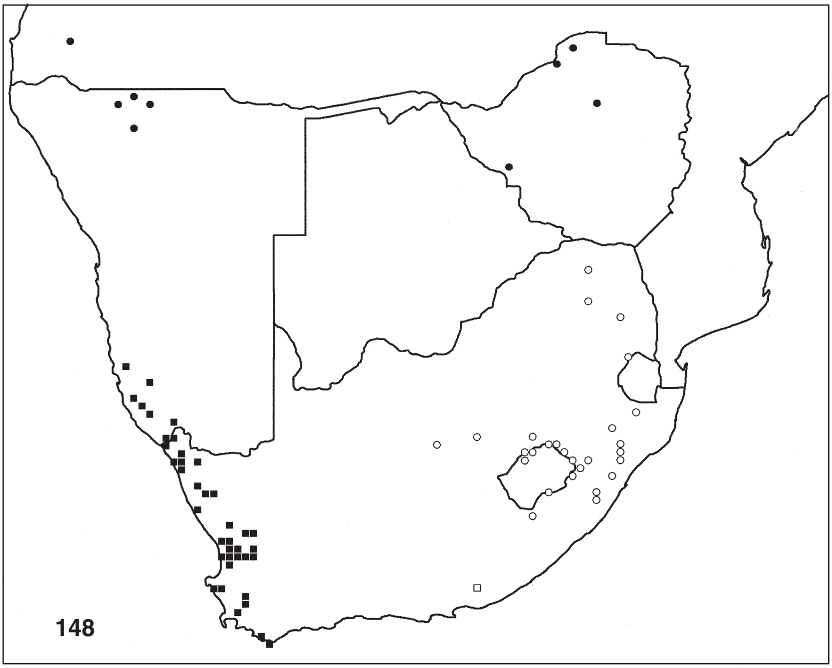


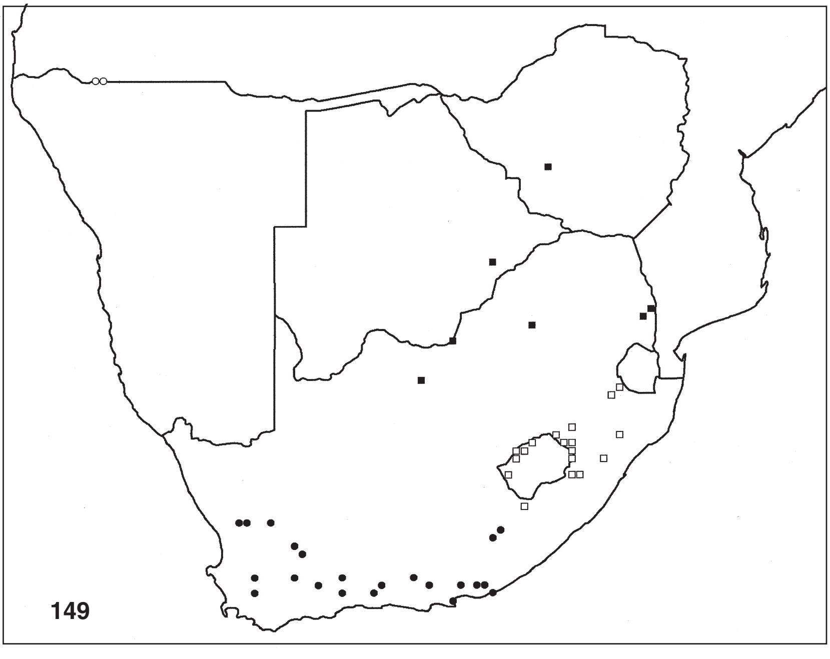
Fig. 145. Distribution of *Gonioscelis* species found north of southern Africa. closed circle = *occipitalis*, open circle = *pruinosus*, closed square = *submaculatus*, open square = *tomentosus*, closed triangle = *whittingtoni*.



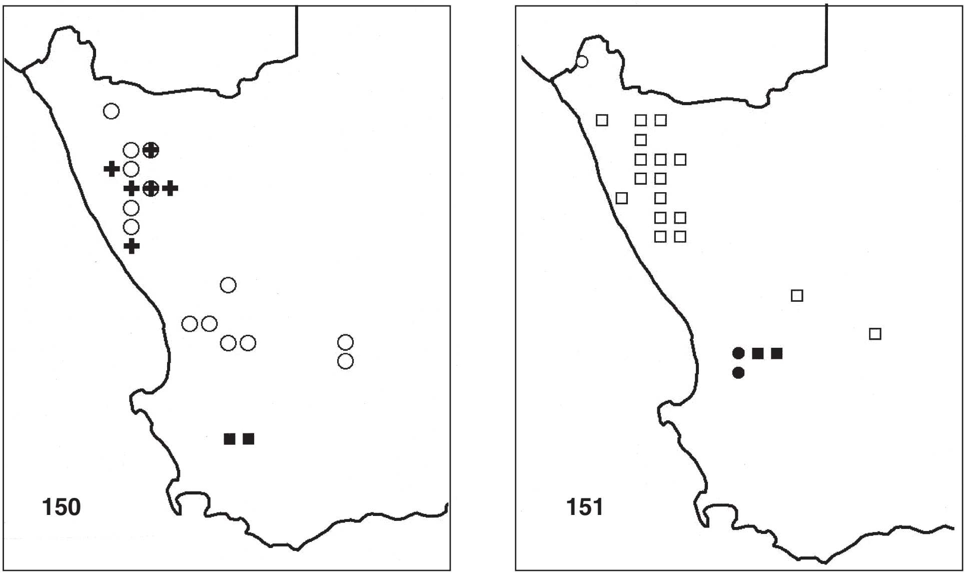


Figs 146–147. Distribution of *Gonioscelis* species found only in southern Africa. 146. closed circle = *bykanistes*, open circle = *cuthbertsoni*, closed square = *hadrocantha*, open square = *mantis*. 147. closed circle = *engeli*, open circle = *scapularis*, closed square = *ventralis*, open square = *xanthochaites*.

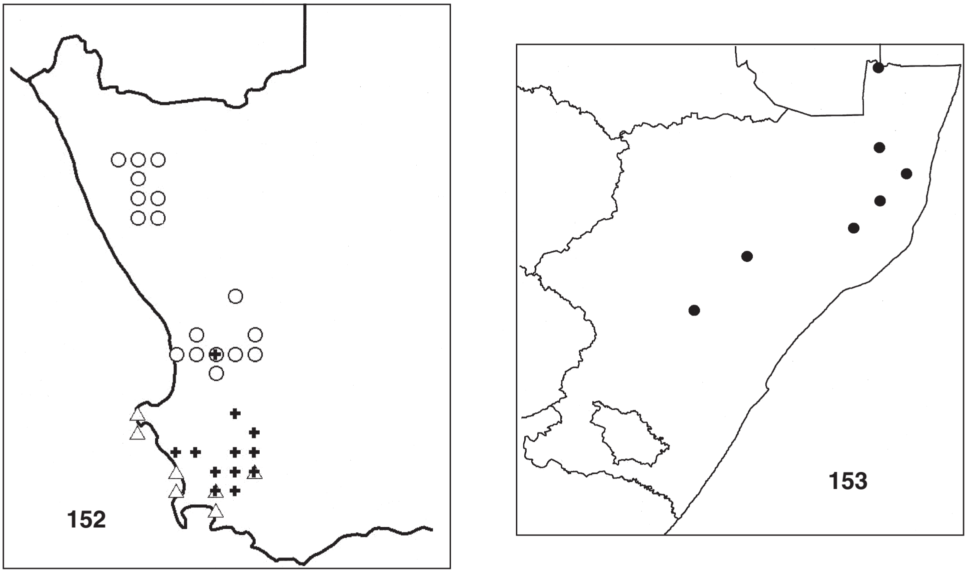




Figs 148–149. Distribution of *Gonioscelis* species found only in southern Africa. 148. closed circle = *genitalis*, open circle = *longulus*, closed square = *maculiventris*, open square = *phacopterus*. 149. closed circle = *lacertosus*, open circle = *nigripennis*, closed square = *ramphis*, open square = *truncatus.*



Figs 150–151. Distribution of *Gonioscelis* species found only along the west coast of South Africa. 150. closed square = *ceresae*, cross = *iota*, open circle = *melas*. 151. closed circle = *chloris*, open circle = *exouros*, closed square = *kedros*, open square = *punctipennis*.



Figs 152–153. Distribution of *Gonioscelis* species. 152. West coast species. cross = *haemorhous*, open triangle = *hispidus*, open circle = *pickeri*. 153. KwaZulu-Natal species. closed circle = *zulu*.

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Names in bold face are valid species, others are synonyms of the species indicated.

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